

WEBFILM THEORY

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Abstract

Since its inception in 1989, the World Wide Web has grown as a medium for publishing first text, then images, audio, and finally, moving images including short films. While most new media forms, in particular, hypertext, have received scholarly attention, research into moving image on the Internet had been limited. The thesis therefore set out to investigate webfilms, a form of short film on the WWW and the Internet, over a period of 9 years (1997-2005). The thesis was theoretically embedded in questions regarding new media as new field of research, since the increasing visibility of new media had resulted in the emergence of the discipline of 'new media studies'. This context raised issues regarding the configuration of new media studies within the existing academic disciplines of media and cultural studies, which were explored in depth in the literature review. The case studies of the thesis explored and analysed webfilms from a vantage point of actor-network theory, since this was arguably the most appropriate methodology to a research object considerably influenced by technological factors. The focus was on the conditions of webfilm production, distribution, and exhibition, and the evolution of webfilm discourse and culture. The aim was to seek answers to the question 'How did webfilm arise as (new) form of film?'

In the process of research, a number of issues were raised including the changing definition and changing forms of webfilms, the convergence of media, and the complex interdependency of humans and their computers. The research re-evaluates the relationship between human and non-human factors in media production and presents a fresh approach by focusing on the network as unit of analysis.

The thesis as a whole not only provides new information on the evolution of webfilm as a form of film, but also illustrates how the network interaction of humans and non-humans lies at the heart of contemporary new media and convergence culture.

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Table of Contents

List of Figures	VII
List of Tables	VIII
1. Introduction	1
1.1. Short Film on the World Wide Web as an Object of Study	1
1.2. Mapping the Field: The Problem of New Media Studies	3
1.3. Preliminary Remarks on Actor-Network Theory	5
1.4. Limitations	6
2. New Media Studies	8
2.1. Defining ‘New Media’	8
2.2. The Wider Context: Technology and Society	15
2.2.1. Social Constructivism.....	15
2.2.2. Technological Determinism	18
2.2.3. Actor Network Theory	24
2.3. New Media and the ‘Information Age’	35
2.3.1. Information.....	35
2.3.2. Space	40
2.3.3. Power.....	46
2.3.4. Critique.....	49
2.4. New Media Theory.....	51
2.4.1. Introduction	51
2.4.2. New Media: A New Language?	52
2.4.3. New and Old Media: Remediation	61
2.4.4. Summary: Theories of New Media	74
2.5. Power Structures in New Media.....	75
2.5.1. Introduction	75
2.5.2. The Digital Divide.....	77
2.5.3. Digital Inequality.....	79
2.5.4. Informational Power.....	83
2.5.5. New Media Economics	87
2.5.6. Summary: New Media and Power.....	89
2.6. The Webfilm: Film and New Media	92
2.6.1. Introduction	92
2.6.2. The Webfilm: A Revolution in Filmmaking?.....	93
2.6.3. ‘Animation on the Internet’	97
2.6.4. Summary: Studying the Webfilm.....	99
3. Methodology	102

3.1. Initial Methodological Considerations	102
3.2. Methodological Framework	103
3.2.1. Actor-Network Theory	103
3.2.2. Discourse Analysis	112
3.3. Methods.....	114
3.3.1. Data Collection.....	114
3.3.2. Case Studies	115
3.4. Researching the Internet.....	116
3.4.1. The Researcher's Position within the Networks.....	116
3.4.2. Internet Data.....	117
3.5. Problems and Limitations.....	117
3.5.1. Actor-Network Theory	117
3.5.2. Doing Internet Research.....	118
4. Webfilm Network 1: Actants of Webfilm Production and Consumption	121
4.1. Introduction	121
4.2. Human Agents of Webfilm Production and Consumption: Prosumers	121
4.3. Technological Agents: Webfilm Prosumption	127
4.3.1. Hardware and System Requirements.....	127
4.3.2. Software: Media Formats	135
4.4. Technological Agents: Webfilm Transmission	153
4.4.1. Download versus Streaming.....	153
4.4.2. Bandwidth	160
4.5. Webfilm Prosumption and New Media Discourse	163
4.6. Summary	165
5. Webfilm Network 2: Actants of Webfilm Distribution and Exhibition	169
5.1. Introduction	169
5.2. Webfilm Distribution and Exhibition.....	170
5.2.1. Viral Distribution	170
5.2.2. Distribution via a File-Sharing Network	174
5.2.3. Exhibition on a Personal Homepage	175
5.2.4. Exhibition on Web Portals and Web Entertainment Sites	176
5.2.5. Exhibition on Video Community Sites.....	178
5.2.6. Mobile Exhibition Sites.....	179
5.3. Internet Film Festivals.....	183
5.3.1. Seoul Net Festival	184
5.3.2. FIFI Internet Festival.....	184
5.3.3. Sundance Online Film Festival	185
5.4. Offline Distribution and Exhibition.....	187
5.4.1. DVDs and VHS.....	187

5.4.2. Offline Film Festivals.....	188
5.5. Webfilm Distribution and New Media Discourse	189
5.6. Summary	191
6. Webfilm Network 3: Webfilm Discourse and Culture	194
6.1. Introduction	194
6.2. Webfilm Aesthetic Discourse: Manifestos and Guidelines	194
6.2.1. The Function of Manifestos	194
6.2.2. The Pluginmanifesto	196
6.2.3. Steve Bennett's Manifesto.....	202
6.2.4. Dogma 2001: The New Rules for Internet Cinema	209
6.2.5. Summary	211
6.3. From Beginnings to Dotcom Crash: Early Webfilm and New Forms (1997-2001)	215
6.3.1. Films Made for the Internet.....	215
6.3.2. Exhibition Venues and Webfilm Festivals	216
6.3.3. Early Webfilm Analysis	227
6.4. After the Dotcom Crash: Short Films on the Web and New Content (2002-2005).....	235
6.4.1. Short Films Distributed on the Internet	235
6.4.2. A Dotcom Survivor: AtomFilms (1998 – present)	237
6.4.3. Webfilm Genres and Categories.....	239
6.4.4. Webfilm Culture: Narrative Webfilms	248
6.4.5. Webfilm Culture: Net Artist Systaime	252
6.5. Webfilm Culture and New Media Discourse	254
6.6. Summary	256
7. Discussion	260
7.1. The Webfilm Networks Reconsidered	260
7.2. Actor-Network Theory as Tool for New Media Research	268
8. Conclusions	275
8.1. Summary	275
8.2. Contributions	277
8.3. Limitations of Thesis.....	278
8.4. Future Work	279
8.5. Final Words.....	280
Appendix: Other Technological Agents	282
Software: Overview.....	283
Compression.....	293
References	300

List of Figures

<i>Figure 1: Still image from online video Star Wars Kid (2002).</i>	172
<i>Figure 2: Still image from online video Is this the way to Amarillo (2005).</i>	173
<i>Figure 3: Still image from online video Is this the way to Armadillo (2005).</i>	173
<i>Figure 4: Logo of ‘Made for the Net’ category on The Sync website.</i>	217
<i>Figure 5: One of the logos on The New Venue website.</i>	220
<i>Figure 6: Logo of The Bit Screen website.</i>	222
<i>Figure 7: Still image 1 from online video 1000 Moons (1999).</i>	224
<i>Figure 8: Still image 2 from online video 1000 Moons (1999).</i>	224
<i>Figure 9: Still image 3 from online video 1000 Moons (1999).</i>	224
<i>Figure 10: Still image 4 from online video 1000 Moons (1999).</i>	224
<i>Figure 11: Logo of Streaming Cinema website.</i>	225
<i>Figure 12: Logo of Catatonic.net website.</i>	227
<i>Figure 13: Still image from online video Persona (1998). Frame size 160x120.</i>	230
<i>Figure 14: Still image from online video Big Daddy Cool (1998). Frame size 120x90.</i>	230
<i>Figure 15: Still image from online video Craze South Ozone (1998). 7.5FPS.</i>	231
<i>Figure 16: Still image from online video Buena Vista Fight Club (2000).</i>	234

List of Tables

<i>Table 1: Overview over the three main media players and their operating system and browser compatibility, as well as comparison of their respective file format support, proprietary formats, scalability, and cost.....</i>	<i>141</i>
<i>Table 2: Market shares of the three main media players 1999-2004.....</i>	<i>143</i>
<i>Table 3: Suggested good and bad practice with regard to webfilmmaking to counteract technological prescriptions, particularly low bandwidth.</i>	<i>214</i>
<i>Table 4: ‘Made for the Net’ category on The Sync website pasted from original html source, containing stills and short summary of all 16 webfilms showcased on the site.....</i>	<i>219</i>
<i>Table 5: Strategies to compress webfilm file size: Reduction of film length, frame size, frame rate, and audio quality.</i>	<i>229</i>
<i>Table 6: List of live-action webfilms on the New Venue website in the years 2000-2001.....</i>	<i>233</i>
<i>Table 7: Development of digital video editing software Adobe Premiere with regard to operating system compatibility and the features of file size limit and real-time preview.</i>	<i>288</i>
<i>Table 8: Media formats and their respective codecs.....</i>	<i>295</i>

1. Introduction

1.1. *Short Film on the World Wide Web as an Object of Study*

The World Wide Web (WWW) was initially text-based. The first graphical browser, *Mosaic* (later *Netscape*), gained popularity mainly due to its multimedia functionality, which allowed for publication of files other than simple text. *Mosaic* was released in 1993. Despite steadily improving browsers in the years following *Mosaic*'s release, moving image and especially live action film remained a rare occurrence due to technical prescriptions of hardware and bandwidth limitations. The exception was adult entertainment – Boyd-Graber (2001) points out that the long download times and bad quality of early film on the WWW did not deter those interested in pornography. From 1998 onwards, websites such as iFilm and AtomFilms started evolving as a platform for webfilm – a short film broadcast specifically to an Internet audience. AtomFilms quickly became the main site of webfilm entertainment with 2.5 million movie streams and 1 million downloads per month, achieving 700000 registered users in 2000 (Allen 2000). The short films were showcased on the site using streaming technology, resulting in better quality and shorter waiting time for viewers. With this first increase of short films on the WWW came recognition of webfilm as a potentially new form of film, in particular, within France. For example, in 2001, the site Monsieur Cinema for the first time organised a webfilm contest during the International Critics' Week of the Cannes Film Festival (see Chapter 5.4.). Other sites such as FIFI Festival ran an annual International Internet Film Festival, where successful submissions had to be exhibited exclusively online (5.3.). In addition to these French sites, a number of smaller communities sprang up where users showed their own webfilms, while other sites were created to serve as entry point for Internet filmmakers (2.6.). Some sites even published 'webfilm manifestos', describing the rules and motivation behind artistic webfilm production (6.2.). This phenomenon of 'webfilm' served as the starting point for the present academic inquiry. In 2002, despite a prolific existence of webfilm culture, there was little literature on this form of film, with the exception of Karin Wehn (2000-2005). Her research, however, dealt exclusively with the category of animated webfilms.

This research thus sets out to close this gap by examining live action webfilm and the conditions and contexts of its evolution. Since the area of animation was already covered by the extensive research of Wehn, this study largely excluded animated short films. Additionally, while short animations formed a large part of the webfilm corpus, its production and consumption conditions differed considerably from that of live action webfilms. The decision was made to focus on the category of live action webfilm, since this was underrepresented in contemporary film and media research.

The purpose of the research undertaken for this thesis was to study an emerging form of media, the webfilm, in the developing discipline of new media studies. It started by evaluating new media as a new field of study, deploying the methodological tools of actor-network theory and assessing their suitability for a field of research greatly stimulated by its technological context. The thesis examined some theoretical problems behind (new) media research, for example, the issue of studying the influence of technology without resorting to either technological determinism or social constructivism. Overall, the critical discussion of new media as new discipline of studies served to create a theoretical focal point on which to base the subsequent investigation into webfilm as a (new) form of media. The evolution of webfilm was analysed using the categories of production, distribution and exhibition. Another focal point was webfilm discourse and culture with the aim of mapping a discursive and cultural history of webfilm over a period of 8 years (1997-2005). The main research period of this thesis was from 2002-2005, with the write-up taking place between 2005 and 2006.

The thesis progresses from the general to the specific. After an introduction to the field of new media studies below, it proceeds in chapter 2 to discuss in more detail theories of new media and the wider context of technology and society. Chapter 3 provides a detailed study of the methodology of actor-network theory (ANT) and its application and suitability in the specific context of new media and webfilm, and furthermore outlines the methodological problems specific to researching the Internet (3.4.). Chapters 4 – 6 contain three case studies, each of which investigates an aspect of the evolution of webfilm. In chapter 7, the thesis assesses the results of the case

studies, and in an in-depth discussion evaluates the findings of the research, both with regard to the primary object of study, webfilm (7.1.), and the underlying question of the suitability of ANT for new media research (7.2.). Chapter 8 provides a conclusion, revisits some of the thesis' limitations, and gives recommendations for future research.

1.2. Mapping the Field: The Problem of New Media Studies

The field of new media is still a highly contested area. Approaches to new media have inevitably been informed by discussions surrounding the relation between society and technology, and different theoretical strands have emerged. Some work has taken a positive stance, stressing the democratic and liberal as well as liberating potential of new media (for example Rheingold 1991, 1993; Levy 2001), others, in a more pessimistic line, see a clear linkage between (media) technologies and war (Virilio 1989, 1997), and the loss of human agency respectively (Kittler 1997, 1999). Both these positive and negative conceptions have in common a technologically deterministic view – they see technology as changing and determining human nature and society. At the opposite end, social constructivism has insisted on the social shaping of technologies. These approaches stress the social nature of technology and argue that technologies are a response to human needs (Williams 1974; MacKenzie and Wajcman 1999). In recent years, however, actor-network theory has provided us with a third way of understanding technology – one that sees society and technology as mutually constitutive (Bijker and Law 1992; Latour 1991, 1993; Law and Hassard, 1999). Since the discourses surrounding the relation of technology and society vary greatly, it is not surprising that there are various different theoretical frameworks for new media studies. In order to examine the category of webfilm, this study needs to address first the fundamental question of the relations between society and technology. Consequently, one of the aims of this research will be to help define the field of new media as an academic discipline, by contributing to the wider emerging discourse and research on new media.

The study of new media is a young academic discipline and topic. A common approach to studying it has been to resuscitate some theorists of 'old media'. Writing

before the advent of the commercial digital computer, these theorists (for example Innis 1950, 1951; McLuhan 1962, 1964; McLuhan and Fiore, 1967), have been 'rediscovered' for the study of new media:

New media calls for a new stage in media theory whose beginnings can be traced back to the revolutionary works of Harold Innis in the 1950s and Marshall McLuhan in the 1960s.

(Manovich 2001: 48)

A number of recent works on new media have been influenced by McLuhan's theories, examining the ways in which new media technologies have an effect on society (Poster 1990, 1995; Levinson 1999).

The first 'problem' with new media studies, then, is that theorists of new media often rely on theorists of old media who wrote before the arrival of modern digital computers. A second problem regarding new media studies is that the field is highly interdisciplinary. As an academic field of knowledge, 'new media studies' has a close relationship with several disciplinary approaches. Some of new media's related areas are: media and cultural studies (Williams 1974; Winston 1998), postmodern philosophy (Deleuze and Guattari 1987), science and technology studies (Latour 1991, 1993; Law and Hassard 1999), sociology and history (Castells 1996), and some areas of film studies (Darley 2000; Manovich 2000). In its launch issue, the journal *New Media and Society* similarly stresses this interdisciplinary nature of the field, inviting contributions from

communications, media and cultural studies as well as from sociology, geography, anthropology, economics and political and information sciences.

(Janowski *et al.* 1999: 6)

Overall, the heterogeneous character of new media theory and the field's interdisciplinary nature has facilitated a theoretical and methodological pluralism, which is the discipline's main defining characteristic. This pluralism has a number of implications for any research within the field. First, it has to be necessarily selective. Only the research immediately relevant to the investigation can be considered, and various key texts of less relevant areas might be excluded from it. Second, new

media research needs to critically acknowledge the field's heterogeneity, and query any definitions and claims that attempt to provide a unified 'grand theory' (for example Manovich 2001). Lastly, while this study attempts to critique newly released key texts of new media within the disciplines of Media and Cultural Studies (Chapter 2), this endeavour is necessarily incomplete due to the increasing and ongoing number of new literature that is being published as this research is progressing.

1.3. Preliminary Remarks on Actor-Network Theory

Before entering the main corpus of this thesis, a number of preliminary remarks are necessary in order to delineate the roles of various agents within the network under investigation. Since this thesis uses a methodology and theoretical background of actor-network theory (ANT), there are a number of theoretical implications highly relevant to the analysis. These implications pertain to the role of the thesis and the role of its writer. In ANT, as discussed in more detail in 2.2.3. and chapter 3, the main unit of analysis is the network. Since ANT involves a radical critique of traditional dichotomies including subject and object, past and present, technology and the social, and others, critique and its writer are themselves part of the network under investigation. That is, there is no outside of the network and no separation of the writer from her writing, and both thesis and its writer participate in the network as agents.

The role of such an immanent critique is outlined in more detail in 2.3.4. Briefly, Lash (2002) argues that critique can no longer be outside of the object of study since the 'subject' of a socio-technical network is no longer transcendental. He suggests that what he calls 'media theory' is itself part of media. While the overall reasoning behind his argument - that we live in an information society - is problematic and criticised in 2.3., his suggestion for critique to become an 'add on' and thus form part of the networks under investigation is useful.

The role of this thesis, then, is that it functions as an agent within the socio-technical network that it simultaneously investigates. It does not aim merely to 'reflect' what it finds; instead, it participates in the construction of knowledge about webfilms and actively inscribes a theory of webfilms, thus helping to create webfilms by means of

discourse. The thesis also exercises power within the network by creating a respected piece of writing within the context of a respectable institution (Queen Margaret University College). Lastly, the thesis also functions as agent within the overall context of the evolution of new media studies, by inscribing its own theory into the new discipline, thus helping to shape the discipline of 'new media studies' with and against some of the other theories discussed in chapter 2, which themselves exert considerable shaping power. Overall, the thesis-as-agent occupies a central shaping role within the networks under investigation (see also 3.2.2. and 7.1.).

The role of the writer-as-agent is similar to that of the thesis, in that she too is part of the webfilm networks as agent. By inscribing her theory and her history as experienced computer user into the networks under investigation, the writer functions as their human system builder. Additionally, the writer is herself part of the nuclear socio-technical ensemble that she forms with her Internet-connected computer, including hardware and software. Her role within this nuclear network has been under constant negotiation, and the power within this nuclear network has shifted throughout the period of research (2002-2006). Her position is described in more detail in 3.4.1., while some of the negotiations within her nuclear socio-technical network is taken up in 4.6. and 7.2.

1.4. Limitations

There are several limitations to the generalisability of this study. One is the aforementioned heterogeneity of the discipline of new media studies. A second, more important limitation lies in the fast-paced change within the specific object of investigation, moving image on the WWW. At the beginning of the research period, Internet video was a relatively scattered phenomenon and constituted only a small percentage of content on the WWW. Towards the end of the research period, however, moving image content had increased greatly and some observers even designated 2006 as the 'year of Internet video' (Schonfeld 2005b). New phenomena such as video blogging (for example on the sites YouTube and Dailymotion) and quickly increasing publication of various Internet videos including TV clips, home movies, and other 'funny content' means that some of the results presented here are already historic. Wherever possible, the research has incorporated and reflected on

this changing culture of Internet video. In addition, the methodology of actor-network theory has facilitated a theoretical and methodological understanding of this ongoing change (see 7.2.).

To further address the historicity of some of the results of this thesis, it is important to delineate the time frame of investigation in more detail. Chapters 2 and 3, the literature review and methodology sections respectively, were investigated between September 2002 and August 2003. The research period of the first and second case studies, chapters 4 and 5, lasted from approximately September 2003 to October 2004, while the third case study (chapter 6) was investigated between November 2004 and June 2005. There is some overlap within this time frame, and various sections in each of the chapters were updated at a later point or during the stage of write up (2005-2006). Delineating the time frame of investigation, however, is important in order to contextualise the findings of this research. Wherever necessary, an indication of time is given throughout this thesis, by adding the year in brackets when referring to a specified time frame ('at the time of writing').

2. New Media Studies

2.1. Defining 'New Media'

An obvious starting point in investigating the theoretical pluralism of new media studies is to consider existing definitions of 'new media'. The term, despite its current ubiquity in popular and academic discourse, is a concept with no conclusive or specific definition and meaning:

['New media'] is an enormously general and hence vague term, yet its utterance suggests certainty, as if 'the new media' already exist here and now as fully achieved material and social practices.
(Lister *et al.* 2003: 9)

The words are closely related to the Internet; indeed the Internet and the medium of computer are probably most commonly associated with 'new media'. However, the term might also be used to denote a video game,¹ a virtual immersive environment, or digital interactive TV. In order to assess new media's 'newness', it is therefore useful to ask what the 'new' in 'new media' refers to. It is exactly this question, 'What is New about New Media?', that the editors of the journal *New Media and Society* asked several scholars from a variety of disciplines in their inaugural issue. Published in 1999, the journal dealt with the issue of defining the 'new' in new media in a variety of cross-disciplines. The topic was thus approached from a poststructuralist framework (Poster 1999; Robins 1999), a social constructivist theory (Flichy 1999; Livingstone 1999), and other authors provided an economic (Melody 1999) and political (Coleman 1999) take on new media respectively. The launch issue of *New Media and Society* demonstrated the great variety and pluralistic approaches to the topic and illustrated the heterogeneity and struggle involved in establishing a new academic discipline of study.² While the journal thus functioned

¹ There is a growing field of research on computer and video games. See for example the journal *Game Studies* [online]. URL: <http://www.gamestudies.org> [Accessed 5th May 2003] and the videogame theory resource *Ludology* [online]. URL: <http://www.ludology.org> [Accessed 5th May 2003].

² Five years after the inauguration issue of *New Media and Society*, the journal revisited some of the questions addressed in the first publication. This time, the leading question was 'What's changed about New Media?' (Lievrouw 2004). Both the launch and the fifth anniversary issue read together provide an informative overview on the creation and modification of new media discourse.

as a key text in unifying an idea about new media as discipline across various fields, there have been more specific attempts to define new media within the area of Media and Cultural Studies.

Leah A. Lievrouw and Sonia Livingstone (2002), in their introduction to *The Handbook of New Media*, attempt specifically to circumscribe new media as a new area of research. They propose a definition of new media clearly rooted within a context of cultural studies:

by new media we mean information and communication technologies and their associated social contexts, incorporating:

- the artefacts or devices that enable and extend our abilities to communicate;
- the communication activities or practices we engage in to develop and use these devices; and
- the social arrangements or organizations that form around the devices and practices.

(Lievrouw and Livingstone 2002: 7)

They refer to the three parts of the definition as an ‘ensemble’ (in reference to Michael Callon), and see them as mutually determining. While Lievrouw and Livingstone thus argue for a reciprocal relationship between technology and society, they nevertheless take an anthropocentric position with human agents ultimately as the cause of action:

... while ICTs are influenced by the existing technological context, and may have unintended consequences, to a great extent they are *the result of human actions and decisions*.

(Ibid: 8, emphasis added)

Overall, Lievrouw and Livingston’s definition of new media is located within a framework of the social shaping of technologies. Elsewhere, Livingston (1999) critiques the theories and methodology appropriate to a study of new media. That is, she asks whether or not new media require a new framework and new questions, or whether the field is merely a new domain for old theories:

...for the past 40 years media theory has taken its prototype medium to be television, deriving its approach to the domestic use of television from radio research and its approach to cognitive engagement with the text from film theory.

(Livingstone 1999: 64)

This is one of the more interesting questions regarding the study of new media, and one that Lievrouw and Livingstone (2002) take up again in their introduction to *The Handbook of New Media*. Here, they contend that the most common position within new media research is to use already established methods of social science or humanities. The contrasting position argues that new media indeed require a new framework and new methodologies, since they challenge key concepts such as production and consumption, identity, and power (see Lyman and Wakeford 1999 cited Lievrouw and Livingstone 2002). At the extreme end of this position, Scott Lash (2002), deploying a framework of critical theory, argues that in an information society, the traditional *Ideologiekritik* must turn into *informationcritique*. Critique, he contends, can no longer be exterior to the object of criticism, but must be intimately connected to it and become part of its flow:

With the disappearance of transcendentals, critique and the critic can no longer occupy the transcendental, but must instead add on, must instead be a 'supplement' to the immanent and global actor-networks of the information age. The disappearance of the transcendental leaves only the empirical: the information age is radically empiricist. Critique can be no longer transcendental but must become, while equally anti-positivist, empiricist.

(Lash 2002: xii)

Martin Lister *et al*, in their book *New Media: A Critical Introduction* (2003), provide a definition of new media based on the properties of new media themselves, rather than their social context. The authors identify what they consider the five key concepts surrounding the discourse of new media: digitality, interactivity, hypertextuality, dispersal, and virtuality. Digitality refers to the non-physicality that new media, as opposed to old analogue media, share: on the most basic level, they consist of numerical values. Therefore, these media forms are 'dematerialised', and

far easier to access and manipulate than their analogue equivalent (2003: 16). A useful terminological differentiation is that between fixed and fluid media:

Analogue media tend towards being fixed, where digital media tend towards a permanent state of flux. Analogue media exist as fixed physical objects in the world, their production being dependent upon transcription from one physical state to another. Digital media may exist as analogue hard copy, but when the content of an image or text is in digital form it is available as a *mutable string of binary numbers stored in a computer's memory*.

(Lister et al. 2003: 16, emphasis added)

The relative independence of the digital media from physical materials of production means that new media texts such as web content, are easier to manipulate – indeed, the clear distinction between producer and consumer of such a text is blurred:

Texts of this kind exist in a permanent state of flux in that, freed from authorial and physical limitations, any net user can interact with them, turning them into new texts, altering their circulation and distribution, editing them and sending them, and so on.

(Ibid: 17)

While the tendency to manipulate and change new media texts clearly does exist, and it could be convincingly argued for a flux in their authorship, one has to be careful not to omit or obscure the physical and material limitations of digital production and consumption, such as computer hardware and Internet connection.³ Lister *et al.* second defining concept of new media is ‘interactivity’ (2003: 19-23). Similar to ‘new media’, the term ‘interactivity’ has come to be used widely and in different contexts. Two of its most common usages can be described with what Lunefeld (1993 cited Lister 2003) calls ‘extractive’ and ‘immersive’ interaction. In this classification, ‘extractive’ interaction refers to an interactive mode whereby a user,

³ For example, when applying for my MA in Digital Moving Image, one of the requirements for the course was a computer with a minimum high-end specification of hardware. Thus, I and fellow students could only be turned into new media producers by purchasing a computer that was able to process large amounts of data of digital video, for example. There are clearly physical material constraints to manipulating digital data; only they form part of the technical specifications of the medium, rather than constituting direct production material such as film roll etc. Another example is surfing the Internet with a slow computer and/or connection, which is an almost painful experience; and these days it is difficult manipulating larger amounts of data using even a Pentium 1 processor.

while interacting with a text, remains on its ‘surface’. The most common example of this is hypertextual navigation, where users interactively search for information, while remaining sensually distant from the text (see also Bolter 1991). ‘Immersive’ interaction, on the other hand, involves visual and sensual exploration of an interactive space. This exploration is often aided by virtual reality headset and data glove (for example Char Davies’ (1998) VR experiment *Osmose*), but it could also be a joystick or a gun in an immersive video game, such as *Tomb Raider* (1996). In general, then, interactivity as a quality is used to refer to heightened user manipulation and intervention in new media: in a hypertext, navigation is non-linear and to a great extent depending on the individual user’s choice, while in a video game, users immerse themselves in a virtual world, determining to some extent the sequence of story development.⁴ Interactivity can thus be defined by the inscription of a user into the production of a media text, and on this basis has been criticised for not being a new concept at all. A hypertext, for example, resembles the “medieval practice of annotating and adding extensive marginalia to manuscripts and books so that they became palimpsest” (Lister *et al.* 2003: 41). Thus, it seems necessary to emphasise the *technical* aspect in a definition of interactivity: “Technically the ability for the user to intervene in computing processes and see the effects of the intervention in real time” (Ibid: 388).

The next key defining characteristic of new media, according to Lister *et al.*, is ‘hypertext’. ‘Hypertext’ and ‘interactivity’ are overlapping to some extent, and the former could be regarded as a subcategory of the latter. However, given that hypertext has received a lot of critical academic attention, in particular, from a literary theory perspective, it seems worthwhile treating it as separate concept. In the assessment of hypertext, post-structuralist theory has looked at the nodal points between literary theory and hypertext (Bolter 1991; Delaney and Landow (eds.) 1991; Landow 1992; Landow (ed.) 1994; Ryan (ed.) 1999). Drawing mainly on post-

⁴ One of the most popular and best-selling video games in recent times, *GTA: Vice City* (2002), published by Take Two, has a high degree of ‘free roaming mode’, giving the user a maximum of video game freedom. The game consists of criminal missions that a user may or may not take on. Traditionally, most games follow a strict story line – they ‘force’ the user to follow a story in a particular linear order. However, even within the story line, there is always a degree of freedom – i.e. the user has some freedom of movement, and her decisions and movements within the game can be crucial.

structuralists such as Barthes, Foucault, and Derrida,⁵ hypertext for these writers seemed to illustrate one of their key assertions – that all texts have an intertextual character and that:

all texts only made sense to us in relation to other texts, that we understand them as part of a web of textuality... [that] it was the reader as much as the author who created meaning out of the many possible ways of experiencing a text – ways that might include non-linear understandings as well as skipping, reading the end first, navigating the text through indices and footnotes.

(Ibid: 28)

While initially, hypertext was thus read through a post-structuralist lens, this interpretation has come under criticism for the fact that it places the reader-text relationship at the heart of its analysis, leaving out the material conditions of this interaction – i.e. the role of hardware and software in the production of hypertextual meaning:

Cybertext, as now should be clear, is the wide range (or perspective) of possible textualities seen as a typology of machines, as various kinds of literary communication systems where *the functional differences among the mechanical parts play a defining role in determining the aesthetic process*. .. As a theoretical perspective, cybertext shifts the focus from the traditional threesome of author/sender, text/message, and reader/receiver to the cybernetic intercourse between the various part(icipant)s in the textual machine.

(Aarseth 1997: 22, emphasis added)

Thus, according to Aarseth (1997), the medium itself – the computer – plays a vital part in the creation of hypertextual meaning. The fourth defining concept of new media, following Lister *et al.* (2003), relates to the more material processes of production, distribution, and consumption, which is summarised under the term ‘dispersal’. The authors argue for a breakdown of traditional categories between production and consumption, given that it is far easier to publish on the web than in traditional media, with the consequence that many consumers are simultaneously

⁵ For example Barthes 1968; Derrida 1976; Foucault 1969. The issues of relevance include the concept of the ‘readerly/writerly text’; of ‘de-centring’; and of the ‘death of the author’ respectively.

producers.⁶ They use the term ‘prosumer’ to characterise a new kind of media consumer, who is simultaneously a producer. The computer itself, they follow, is the ultimate ‘prosumer’ technology – a technology used for production, consumption, and distribution (2003: 34). The last concept Lister *et al.* employ in their definition of what is new about new media, is ‘virtuality’. Together with the term ‘interactivity’, ‘virtuality’ has achieved widespread use within popular and academic discourse. Similar to ‘hypertext’, ‘virtuality’ too has two main different meanings. In conjunction with immersion, virtuality is synonymous with ‘immersive interaction’, in that it refers to virtual reality (or VR, as coined by Jaron Lanier, referring to the use of headsets, data gloves, etc.) and describes research in this area. In a second, more common meaning, ‘virtuality’ is used to generally describe the experience of being in an online space such as the Internet (2003: 34-37). As we have seen, many of the defining features of new media, just like ‘new media’ itself, are used in different contexts and have multiple meanings.

Lister *et al.*, however, are not the first to attempt to try answering the question, ‘what is new media?’ Lev Manovich (2001), in his book *The Language of New Media*, lists five principles of new media: numerical representation, modularity, automation, variability, and cultural transcoding. While Lister *et al.* provide an overview of discourses surrounding new media without subscribing to any particular position, Manovich, similar to many other cultural theorists, favours a technological deterministic view. He sees the world in the middle of a ‘new media revolution’, where all culture is shifting to computer-mediated forms of production, distribution, and communication (Manovich 2001: 19). Thus, his principles of new media are informed by a mainly technological deterministic point of view. For example, his principle of ‘modularity’ is reminiscent of McLuhan’s modular principle of the media, while ‘automation’ is defined as the removal of human intervention from the creative process (2001: 32). Manovich’s principle of ‘numerical representation’ and ‘variability’ are summarised by Lister’s concepts of digitality and flux of new media (as opposed to old media’s ‘fixity’), while his principle of ‘transcoding’ refers to the process of ‘remediation’ as property of computerised media.⁷ Manovich’s theory of new media is discussed in more detail in 2.4.2.

⁶ The best example would be the personal homepage.

⁷ Their slightly different approach might be related to their backgrounds. Lister *et al.* mainly deploy a cultural studies perspective, while Manovich also has a background in computer programming.

Overall, the existing definitions of new media consider its newness central to the field's definition. The focus is on the ways in which new media differ from old media. To this purpose, some studies have adopted a technologically deterministic viewpoint, analysing the technical properties of new media, while others, in a cultural studies tradition, focus mainly on new media's human use.

2.2. The Wider Context: Technology and Society

It has become clear from our attempt to define new media that the study of new media is embedded in a more general discussion of the relationship between society and technology. The following sections look at the wider context the question of new media is embedded in, outlining three different approaches to understanding technology and society.

2.2.1. Social Constructivism

Traditionally, British media and cultural studies have based their theory and analysis of technology largely on the work of Raymond Williams (1974, 1977, 1981) and social constructivism, which considers technology only in the context of human use and need. However, as noted earlier and as illustrated by the example of Manovich, new media studies have been quick to turn to Marshall McLuhan and his media theory to assess today's 'information revolution'. Some even consider him one of new media's 'founding fathers'.⁸ The main and irreconcilable argument between the positions represented by Williams and McLuhan respectively is the role of technology within society, and the question whether or not technology can cause social and cultural change. It is easy to see why this question has taken centre stage within discourses of new media. Attempts to define new media are commonly located in a position of technological determinism, or they operate from a perspective of the social shaping of technology.

⁸ Famously, popular digital culture magazine *Wired* has chosen McLuhan as its patron.

A British cultural studies tradition represented by Raymond Williams analyses media and technologies as a response to social needs: “All technologies have been developed and improved to help with known human practices or with foreseen and desired practices” (Williams 1974: 129). Williams’ position stems from ‘cultural materialism’ and has to be understood in the wider context of a Marxist-humanist tradition which attributes agency to humans alone, and that views technology as an instrument, the use of which is dependent on the intentions and purposes of the groups using it. Thus, the focus of analysis is never on technology itself, but on its uses and the power relationships arising out of its use. In Williams’ view, media are a form of cultural production by human agents, be it individuals, institutions, or interest groups. The role of technology is not addressed directly, instead, technologies are only ever considered in the context of cultural production. Thus, what is studied are:

(1) the reasons for which technologies are developed, (2) the complex of social, cultural, and economic factors which shape them, and (3) the ways that technologies are mobilised for certain ends.

(Lister 2003: 81)

There does not seem to be a place to study technology and its characteristics as such. For Williams, technology cannot become a cultural agent, since this is irreconcilable with a Marxist-humanist position and would equip technology with the power of social change, thus nullifying or reversing notions of human agency:

If the medium – whether print or television – is the cause, all other causes, all that men [sic] ordinarily see as history, are at once reduced to effects. Similarly, what are elsewhere seen as effects, and as such subject to social, cultural, psychological and moral questioning, are excluded as irrelevant by comparison with the direct physiological and therefore ‘psychic’ effects of the media as such.

(Williams 1974: 127)

With the great influence of Williams’ work in British cultural studies, Lister *et al.* assert that Williams has become “so deeply assimilated within the media studies discipline that he is seldomly explicitly cited” (2003: 73). The general problem with

a cultural studies analysis of technology, then, is that its political agenda prohibits any analysis that would consider agents other than human ones, since its concerns are to analyse power structures and to locate sites of human resistance and agency. In his essay 'Identity and Cultural Studies: Is That All There Is?' (1996), Lawrence Grossberg addresses and questions this political emphasis of cultural studies. Writing in the 1990s, Grossberg criticises what he considers a narrow focus of a cultural studies that occupies itself mainly with identity politics and political resistance. He argues that especially the advent of postcolonial studies has contributed to the perpetuation of traditional dichotomies of self/other, space/time etc., since many writers have located sites of resistance in identity politics. These identity politics, however, serve to perpetuate existing power relationships since they do not challenge or question the dichotomy that lies at the heart of any subject construction. While agreeing that a concern for identity and political struggle are important to cultural studies, Grossberg nevertheless proposes a different approach to a politics of difference. His suggestion is to focus on agency that is located not outside and against the centre of power, but instead is part of the networks of agency, thus overcoming traditional dichotomies such as space/time, self/other. Drawing on Deleuze and Guattari's (1987) work on power, he proposes a concept of agency, which is not subject-based, but a property of a particular site of power:

Agency is the product of diagrams of mobility and placement which define or map the possibilities of where and how specific vectors of influence can stop and be placed....Agency as a human problem is defined by the articulations of subject positions and identities into specific places and spaces...on socially constructed territories.

(Grossberg 1996: 102)

That is, for Grossberg, agency is located not in an agent (a subject). Instead, agency is a circulating flow that produces a sense of agents and identities. Overall, the question of technology and society is problematic within the tradition of cultural studies for a variety of reasons. It remains to be seen whether and how a reconciliation of political struggles that allows for an inclusion of technology as legitimate object of analysis can be achieved.

2.2.2. Technological Determinism

The commercial advent of new media, especially the digital computer and the Internet, has revived popular and academic interest in Marshall McLuhan's theory of media. Unlike Williams, who has entered the canon of cultural and media studies, McLuhan's theories are highly contested and criticised, since he foregrounds technologies in his analysis of media, showing little concern for human political struggles. Instead, McLuhan is interested in the material aspect of media and media's 'identities'. His work is greatly influenced by economist and communication theorist Harold Innis. Innis was the first to consider the materiality of different media and their material influence on empire and society. In *The Bias of Communication* (1951), Innis differentiates between time-biased media and space-biased media. According to him, time-biased media, such as stone and clay, encourage the extension of empire over time, since they are heavy, durable, and difficult to move (for example the pyramids of Egypt). Space-biased media such as paper, on the other hand, are light and portable and can be transported over long distances, thus facilitating the extension of empire over space. For Innis, speech is a time-biased medium - it has existed for a long time. Overall, he contends that every type of medium embodies a bias towards either space or time. In his theory, Innis foregrounds the material form of media, and he studies society mainly in the context of the influence of media and technologies (Innis 1950, 1951). This materiality of technology and its influence on society resounds in McLuhan's theory of media. Similar to Innis, McLuhan deliberately excludes content in his assessment of media; instead, the medium (which he conflates with 'technology'), takes centre stage:

The effect of the medium is made strong and intense just because it is given another medium as "content". The content of a movie is a novel or a play or an opera. The effect of the movie form is not related to its program content. The "content" of writing or print is speech, but the reader is almost entirely unaware either of print or of speech.

(McLuhan 2001 [1964]: 19)

Hence, the content of any medium is not, as traditionally understood, its story or narrative. Instead, the content of a medium is always another medium, summarised

by the now famous slogan, “the medium is the message” (Ibid: 7). McLuhan differentiates between oral culture, print culture, and electronic culture. In print culture, knowledge is achieved via classification and it is thus linear, while in electronic culture, knowledge works via ‘pattern recognition’. Both oral and electronic cultures are defined by a mosaic, compared to the syntax and linearity of sequential print culture. A mosaic, on the other hand, is not sequential but simultaneously present. For example, a television mosaic is a “total field of simultaneous impulses” (Ibid: 342). McLuhan defines media as either ‘hot’ or ‘cool’. Hot media are mainly linear print media (book, scientific discourse, newspaper) and film as well as photography. They have in common that they contain meaning prior to interpretation. Cool media, on the other hand, require interpretation since they do not contain any deep meaning. These media rely more on a viewer’s active participation and are thus more interactive. Examples of cool media according to McLuhan include television, advertising, and cartoon. In practice, however, McLuhan detects aspects of hot media in cool media and vice versa; thus, a strict distinction is not possible.⁹ Hot media consist of representations, and cool media or electronic media consist of information. Through the medium, this information is turned into messages (Ibid: 347 – 348). While McLuhan’s classification is useful in assessing some of the differences between different media, especially in regard to their genealogy, the delineation between hot and cool media is today even more problematic. A hot medium such as a Hollywood action blockbuster has considerably moved away from its representational and narrative origin. Frequently, it is turned into an informational spectacle, without any prior deep meaning and with a focus on showcasing special effects.¹⁰ [Newspapers, especially tabloids, are a mosaic of brief informational messages in the form of ‘new breaking stories’, similarly devoid of any prior meaning. Technological developments such as VHS recorders and DVD players, and large widescreen TVs have turned the living room into a ‘home cinema’, where hot media such as films can be experienced via the cool medium of television. Overall, there is a tendency in electronic culture towards cool, mosaic media and the Gutenberg media are increasingly ‘cooling down’. New digital media such as

⁹ A good example of cool aspects in hot media is experimental or modernist literature, such as Joyce’s *Ulysses* (1998 [1922]).

¹⁰ For example *Charlie’s Angels: Full Throttle* (2003) and *Kill Bill: Vol. I* (2003).

computers and video game consoles further support and extend the hegemony of cool media. These are characterised by a high degree of viewer participation – in fact, the term ‘viewer’ is no longer appropriate and is increasingly replaced by ‘user’, signifying a high degree of interactivity and interpretative participation on the side of users. Given the greater human participation in cool media and the ‘cooling down’ of hot media, thus rendering formerly passive viewers more active, it is unfitting to criticise and dismiss McLuhan’s theories on the basis that they support a concept of society *determined* by technology. Arguing in *Understanding Media* that all media are an extension of man [sic], McLuhan furthermore contends that media extend man’s [sic] sensual experience. However, he discusses not only traditional hot and cool media but instead extends his analysis to other forms such as clothing and houses. These objects similarly extend man’s [sic] naked body. Additionally, McLuhan not only foregrounds the organic qualities of technologies but also emphasises their social character:

Failure to understand the organic character of electric technology is evident in our continuing concern with the dangers of mechanizing the world...We live today in the Age of Information and Communication because electric media instantly and constantly create a total field of interacting events in which all men participate. Now, the world of public interaction has the same inclusive scope of integral interplay that has hitherto characterized only our private nervous systems. That is because electricity is organic in character and confirms the organic social bond by its technological use in telegraph and telephone, radio, and other forms.

(Ibid: 269)

McLuhan is furthermore interested in the change of power within the electronic age. For him, acceleration and the increase in scope of power are linked. For example, with mechanised phonetic writing, the storing and means of speedy retrieval of information was achieved which led to the spread of ‘power that is knowledge’ in the imperial nation-state (Ibid: 278ff). Influenced by Innis’ analysis of the relationship of media and power, McLuhan argues that, while the content of old (representational) media such as painting, cinema, and philosophy were durable, that of new media such as telegraph and television are brief and constantly new. Hence, power itself has

become more discontinuous, mosaic and nomadic (Ibid: 267ff). To conclude, then, McLuhan's theory of media is concerned with an increase of media and technologies and their influence on humans. His distinction of hot and cool media and his analysis of power are useful for assessing the increase of cool media and the overall cooling down of hot media in today's 'information and communication age'. The degree of technological determinism in his work is debatable. Overall, however, McLuhan does not paint a dystopian picture of passive humans controlled by technology but instead provides a useful framework for understanding the increased importance and materiality of media.

Similar to McLuhan's theory of media, French writer Paul Virilio foregrounds technologies in his critical analysis of contemporary society. Unlike McLuhan, however, Virilio deploys a clearly technologically deterministic framework where technology has an ever-increasing destructive influence and impact on human society. According to Virilio, modern technologies of communication and surveillance inflict considerable social destruction. At the centre of Virilio's analysis lies the logic of ever increasing speed or 'dromology', which, he argues, lies at the heart of the organisation and transformation of today's society. For Virilio, speed is time. In his theory it is speed and thus time, rather than space that drives history. In addition, technology has collapsed space into time:

Space is no longer in geography—it's in electronics. Unity is in the terminals. It's in the instantaneous time of command posts, multinational headquarters, control towers etc. Politics is less in physical space than the time systems administrated by various technologies, from telecommunication to airplanes, passing by the TGV, etc. There is a movement from geo- to chrono-politics: the distribution of territory becomes the distribution of time. The distribution of territory is outmoded, minimal.

(Virilio and Lotringer 1997: 114)

Modernity is thus characterised by the destruction of space, which has culminated in the disappearance of substance. Substance has been replaced by contingency and the accident. Virilio mourns this disappearance of space and substance, and he considers vectorisation, speed and technology highly destructive. In Virilio's dystopian view of technology, culture, emptied of any substance, is reduced to information, and there is

no past or future but only real time. For Virilio, dromology causes not only negative transformations of social, political and cultural life, but this continuous acceleration also drives and determines history. The implications for humans are negative and destructive. In Virilio's modern configuration, the body itself becomes invaded and polluted by technologies, ultimately turning into a terminal (Virilio 1999). Similar to McLuhan, Virilio argues for a blurring of boundaries between technology and the human body, inasmuch that they are no longer clearly demarcated. However, while McLuhan describes a relatively harmonious, almost symbiotic relationship of human body and technology (one extending the other), Virilio argues that such technological invasion of the human body is highly destructive and dangerous. Technologies, in his argument, destroy human will by reducing them to a state of inertia whereby machinic activity replaces human activity and will. Virilio's humans, both in body and mind, turn into a passive object of machinic agency:

Home shopping, working from home, online apartments and buildings: 'cocooning', as they say. The urbanization of real space is thus being overtaken by this urbanization of real time which is, at the end of the day, the urbanization of the actual body of the city dweller, this citizen-terminal soon to be decked out to the eyeballs with interactive prostheses based on the pathological model of the 'spastic', wired to control his/her domestic environment without having physically to stir: the catastrophic figure of an individual who has lost the capacity for immediate intervention along with natural motricity and who abandons himself, for want of anything better, to the capabilities of captors, sensors and other remote control scanners that turn him into a being controlled by the machine with which, they say, he talks.

(Virilio 1997: 20)

Virilio's work has to be read against his Christian humanist background, and his distinctly political writing is concerned with the disappearance of what he considers the social human being. While his analysis of technology as material objects rather than just 'instruments' of human use provides important insights, Virilio's work is problematic in a number of ways. He mourns the loss of the rational modern (male) subject and an ideal Western society with the nuclear heterosexual family at its core, allocating females the role and function of reproduction. Virilio also argues against online sexuality, since it destroys what he considers real (heterosexual, nuclear)

families as core of society and furthermore devalues single-parent families as unnatural. In addition, he singles out technology as the sole cause of the problems and is unable to provide a more complex analysis that would take other sociological factors into consideration:

The multimedia world would no longer just be the casino so loudly decried by economists but an actual brothel, a cosmic brothel, the startling commercial success of the sex hotline repeating itself ad infinitum *thanks to the prowess of interactive telecommunications*.

(Ibid: 114, emphasis added)

Overall, Virilio idealises an autonomous subject whose identity, freedom and privacy is threatened by technology. This is the subject of modernity and of the age of representation, defined by a dichotomy of self vs. other. It is impossible for him to conceive of any benefits of technology, as in the case of medically necessary surgery (for example fitting a pacemaker). Additionally, his theory never leaves the realm of representation and its associated dichotomies (subject/object; human/technology etc.). Instead, he searches for a pre-media and pre-technological innocence and ignores any dialogical relationship that humans and technologies might have.

In a similar vein, German media theorist Friedrich Kittler (1997, 1999) argues for a clear development of growing media and technological influence on humans from around 1880, prior to which there existed an 'organic' unity (man and nature as organic continuum) in what he refers to as 'discourse networks' of 1800. His media theory is based on a historic tradition of the objectification of humans that started with the typewriter:

In a standardized text, paper and body, writing and soul fall apart. Typewriters do not store an individual; their letters do not transmit a beyond, which could be hallucinated by perfect alphabets as meaning. Everything which, since Edison's two innovations, can be taken over by the technical media disappears out of the type-scripts. The dream of a real, visible, or audible word arising from the words is over. The historical synchronicity of cinema, phonography, and typewriter separated the data flows of optics, acoustics, and writing and rendered them autonomous.

(Kittler 1997: 44)

In the course of these developments, according to Kittler, human agency has decreased, while technologies have turned into agents, and now inscribe upon humans: “Humans change their position – they turn from the agency of writing to become an inscription surface” (Kittler 1999: 210).

To conclude, writers that foreground the impact of technology on humans focus on material objects rather than discourse. For McLuhan, Virilio and Kittler, technology and material objects become structure and possess agency. However, while McLuhan describes a neutral or even celebratory relationship of material technology and humans, Virilio considers material technology and information as instruments of surveillance and governmentality, while Kittler’s humans turn into an inscription surface for machines. Both Virilio’s and Kittler’s writings, despite taking a dystopian viewpoint, provide useful insights and possible starting points for investigating the potential of technological agency. Their highly critical discourse reminds us of the importance of ethical and social considerations with regard to ever-increasing technological progress.

2.2.3. Actor Network Theory

Bruno Latour was one of the first theorists to attempt a sociology of material artefacts and technology (Latour 1991, 1992). In *We Have Never Been Modern* (1993), he outlines his amodern theory, exploring ‘modernity’ as an artificial construction based on binary oppositions such as human/non-human, subject/object, and nature/culture. He argues that what he calls ‘The Modern Constitution’ (= modernity) is based on two key dichotomies. One is the separation of humans (human culture) and non-humans (non-human nature), a separation, which cuts the modern constitution in two halves: Nature (including Science) and Society (Humans). The second dichotomy is the absolute separation of present from past. Latour contends that the aim of modernity was to completely separate these opposite spheres; however, this has been impossible to achieve. This is because at the very moment that modernity invented these distinctions at the beginning of the ‘scientific revolution’ in the seventeenth century, a proliferation of the place in between the spheres of human culture and inhuman nature simultaneously began. In this

‘nonplace’, forms of hybrids (‘quasi subjects’ and ‘quasi-objects’) began to multiply. Latour argues that these quasi-objects and quasi-subjects are marked by hybridity and describes how they not only multiply between nonhuman nature and human culture but also move in networks between the four domains of nature, society, language and general ‘Being’:

Of quasi-objects, quasi-subjects, we shall simply say that they *trace networks*. They are real, quite real, and we humans have not made them. But they are collective because they attach us to one another, because they circulate in our hands and define a social bond by their very circulation. They are discursive; however, they are narrated, historical, passionate, and peopled with actants of autonomous forms. They are unstable and hazardous, existential, and never forget Being.

(Latour 1993: 89, emphasis added).

That is, quasi-objects, according to Latour, are simultaneously real, discursive, and social (Ibid: 64). However, it is in the interest of the modern constitution to ignore the existence of hybrids, since they undermine the very separation of spheres that modernity is based upon. Latour argues that despite this ‘covering up’ of hybrids by the modern constitution, the actions of mediation, translation, and the networks have always been present:

Everything passes in the middle, everything passes between the two [Nature and Society], everything happens by way of mediation, translation and networks, but this space does not exist, it has no place. It is the unthinkable, the unconscious of the moderns.

(Ibid: 37)

Key to an understanding of the proliferation of hybrids within modernity is Latour’s concept of agency. For Latour, agency is defined by the ability to cause effects, and can thus be located both in human and non-human agents. His example is the invention of the air-pump of Robert Boyle, which, drawing on the analysis of Steven Shapin and Simon Schaffer (1985 cited Latour 1993), is one of the first examples of non-human agency:

Here in Boyle's text we witness the intervention of a new actor recognized by the new Constitution: *inert bodies, incapable of will and bias but capable of showing, signing, writing, and scribbling on laboratory instruments* before trustworthy witnesses. These nonhumans, lacking souls but endowed with meaning, are even more reliable than ordinary mortals, to whom will is attributed but who lack the capacity to indicate phenomena in a reliable way.

(Ibid: 23, emphasis added)

Instead of the subject/object dichotomy and that of nature/culture, which characterises modernity, amodernity is marked by sociotechnical hybrids and networks consisting of both human and non-human agents, occupying the same nonplace. While clearly against the project of modernism, Latour also argues against postmodernism, since in his view, it remains in the realm of the modern constitution (Ibid: 46f). Instead, he proposes an amodern theoretical stance as a tool to examine the population of hybrids that proliferate within the modern constitution in the 'nonplace' between (modern) Natures and Society:

This retrospective attitude, which deploys instead of unveiling, adds instead of subtracting, fraternizes instead of denouncing, sorts out instead of debunking, I characterize as nonmodern (or amodern). A nonmodern is anyone who takes simultaneously into account the moderns' Constitution and the populations of hybrids that that Constitution rejects and allows to proliferate.

(Ibid: 47)

Alongside the first key split of the spheres of nature and culture, the modern constitution is also committed to a temporal separation of past and present. Since modernity and historicism with its obsession with teleological time and dates fuels the separation of nature, society, and discourse, Latour proposes a concept of historicity which is independent of a teleological time frame and which instead "situates the same events with respect to their intensity" (Ibid: 68). Similar to Foucault's (1977b) concepts of genealogy and historical affiliation, Latour's resulting networks and quasi-objects are thus polytemporal and cyclical:

No one can now categorize actors that belong to the 'same time' in a single coherent group. No one knows any longer whether the reintroduction of the bear in Pyrenees, kolkhozes, aerosols, the

Green Revolution, the anti-smallpox vaccine. Star Wars, the Muslim religion, partridge hunting, the French Revolution, service industries, labour unions, cold fusion, Bolshevism, relativity, Slovak nationalism, commercial sailboats, and so on, are outmoded, up to date, futuristic, atemporal, nonexistent, or permanent.

(Ibid: 74)

Illustrated by the example of Boyle's air pump, crucially, in these networks, quasi-objects (for example things) are no longer passive intermediaries but active mediators – “actors endowed with the capacity to translate what they transport, to redefine it, redeploy it, and also to betray it” (Ibid: 81). Overall, in Latour's Actor-network approach, modern dichotomies are replaced with a sociotechnical network. The grounds for analysis of these networks are to investigate how they become stabilised and de-stabilised, that is, how unstable existences turn into stabilized essences and vice versa (Ibid: 134). Latour's ideas provide an interesting alternative in configuring the relationship of technology and society. Instead of two separate and mutually exclusive spheres, technology and society are seen as mutually constitutive. This idea of a ‘sociotechnical ensemble’ has been taken up by a number of theorists to explore and investigate the interface of culture and technology.

Donna Haraway, in ‘The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others’ (1986) explores some of the key issues and nodal points between actor-network theory and techno-feminism. She describes nature as a “commonplace and a powerful discursive construction, effected in the interactions among material-semiotic actors, human and not” (1986: 298). Thus, similar to Latour, she conflates the boundaries between the semiotic and the material, arguing instead that any object of knowledge is an “active part of the apparatus of bodily production” (Ibid). Haraway furthermore contends, in the spirit of actor-network theory that the ‘one’ biological body exists in multiple contending forms:

[T]hese contending bodies emerge at the intersection of biological research, writing, and publishing; medical and other business practices; cultural productions of all kinds, including available metaphors and narratives; and technology, such as the visualisation technologies that bring colour-enhanced killer T cells and intimate

photographs of the developing fetus into high-gloss art books, as well as scientific reports.

(Haraway 1986: 298)

Haraway's techno-feminism has culminated in the image of the cyborg – a metaphor for human-machinic identity. In her seminal essay 'A Manifesto for Cyborgs' (1985), she argues against the dichotomy of technology and nature, and stresses the pleasure of a cyborg identity, celebrating it as a feminist machinic form of embodiment:

Our bodies, ourselves; bodies are maps of power and identity. Cyborgs are no exceptions. A cyborg body is not innocent; it was not born in a garden; it does not seek unitary identity and so generate antagonistic dualisms without end (or until the world ends); it takes irony for granted. One is too few, and two is only one possibility. Intense pleasure in skill, machine skill, ceases to be a sin, but an aspect of embodiment. The machine is not an *it* to be animated, worshipped, and dominated. The machine is us, our processes, an aspect of our embodiment. We can be responsible for machines; *they* do not dominate or threaten us. We are responsible for boundaries; we are they.

(Haraway 1985: 26)

The image of the cyborg has come to play an important role within emerging new media discourse, as it symbolises nature, society, as well as the role of technology in and within them. Half-machine and half-human, the cyborg is a prime example of a 'socio-technical ensemble'. Haraway is furthermore interested in power relations within the reconfiguration of technology and society. In contrast to much poststructuralist criticism which, following Foucault, locates power in discourse, Haraway rejects discourse as the primary location of power. Instead, knowledge (science) is already fused with power (technology). For Haraway, power is not in discourse but in structures of information. Trademark and copyright are such information-based forms of power. These configurations of information exercise power through exclusion. Facts are not neutral but already charged with power since information is trademarked, patented, and accumulated as capital. Overall, power, for Haraway, is related to intellectual property. Her specific interest lies in the interface of technology and biology, and she examines how biology has become part of technology by means of intellectual property (Haraway 1996: 43). Her example is the

OncoMouse – the first patented, genetically manipulated mouse.¹¹ The possibility to patent biological life illustrates the fusion of power and science, a process Haraway refers to as ‘technoscience’.¹² For Haraway, the question of power struggles is closely related to biological ownership. The focus is on why certain interest groups have the right to such biological property while other groups are excluded (Ibid: 249f). Outside the biological realm, the debate surrounding copyrighted music, films, and software illustrates these new power struggles involving intellectual property. On the one hand, music companies have been facing great difficulties in their struggle to maintain the sole ownership and control of copyrighted material. File-sharing software such as *KaZaA* and *Limewire* has made it easy for users to download music from any artist illegally and free of charge.¹³ On the other hand, counterpolitical struggle has criticised these new forms of power based on exclusion. While for many, the fight against intellectual property consists of counteracting this exclusion by cracking software code in order to make it available for free,¹⁴ others have counteracted the power of copyright by creating software that is free of charge which, unlike cracking and pirating existing software, is entirely legal. One such reaction against intellectual ownership is the Open Source movement, a movement that centres around making software code available for free, thus allowing other programmers to help find bugs and improve the software.¹⁵ The most famous example of this is the alternative operating system *Linux*, the development of which challenged the dominance of Microsoft’s omnipresent operating system *Windows*.¹⁶

Similar to Donna Haraway, Jay Macgregor Wise (1997) draws on actor-network theory in his analysis of technology and society. His work is influenced by both actor-network theory’s understanding of human and nonhuman agency and Deleuze and Guattari’s (1987) concept of machinic processes of reality and agency. Wise attempts to “elaborate a critical, philosophical, and epistemological framework from which to better understand our relations to technology and social space” (1997: xiii).

¹¹ See The Jackson Laboratory (2005) for an overview of the *OncoMouse*® technology.

¹² See Woessner (1999) for a discussion of the patenting of animals.

¹³ See Garofalo (2003) for a discussion of the ownership of Internet music.

¹⁴ An activity that is highly illegal. One (in)famous Software-hacking groups of the late 1990s was called *Radium* and cracked mainly music software such as *Cubase* and *Cool Edit Pro*.

¹⁵ See JARlie.com (n.d.) for a list of Open Source software under Windows.

¹⁶ See Moody (2001) for a discussion of Linux as ‘rebel code’.

To this purpose, he outlines what he considers three different ways to theorise and analyse technology: a modern one, an amodern one, and a Deleuzian one. His 'modern' analysis of technology is based on Latour's (1993) critique of modernity and centres on issues of time, causality, and identity. Time, in Macgregor Wise's modern analysis, signifies death. Since humans fear death, they deploy and develop technologies to control time (clock, timesheets, schedules, etc.). Thus, one of the functions of technology in the modern episteme is the control of time. Causality is the second key concept in a modern configuration of technology. Macgregor Wise shows how both technological determinism and a social shaping view of technology are rooted in what Latour calls the 'modern constitution', since both deploy a framework of causality. The technologically deterministic approach, as favoured by Jacques Ellul (1964 [1954]), Herbert Marcuse (1968), and Daniel Bell (1973), argues that technology drives society and thus, as technology changes, so society follows. On the other hand, social shaping theories see technology as mere instrument for human change. In contrast to technological determinism however, here, humans rather than technology are seen as the cause of change. This position, as we have seen earlier, is favoured by a large tradition of British cultural studies following Raymond Williams. For Macgregor Wise, these mutually exclusive configurations of technology illustrate an underlying structure of modernity that is based on polarisation and dichotomies. Identity, his third key concept, furthermore supports his argument. For Macgregor Wise, the modern episteme produces a concept of identity based on the dichotomy of what he calls 'Master and Slave'. That is, both human and non-human identity is either dominant or submissive. Thus, a dualism between humans and technology is created:

With regard to modern technology, humans create machines to be slaves (to control space, and by doing so controlling time); however, humans are seen then to have been enslaved by their machines: For example, Ellul argues that humans are enslaved by the abstract constraints of technique; Marcuse notes the totalitarian tendencies of advanced industrial society; and Mumford discusses authoritarian technics.

(Macgregor Wise 1997: 13)

Overall, Macgregor Wise agrees with Latour in that modernity is an artificial construct. He rejects a modern configuration of technology since for him, the

demarcations between humans and non-humans are never clear. For Macgregor Wise, the ‘Master’ is as dependent on the ‘Slave’ as the ‘Slave’ is on the ‘Master’. Therefore, an analysis of technology that is based on polarisation and a resulting causality is not successful. In contrast to this modern analysis, an amodern analysis of technology overcomes the division between technology and humans because it focuses on agency (rather than identity) in social space, which, according to Latour, both humans and nonhumans can exert. That is, the focus of the episteme is *not on identity but on agency* and what matters to the analysis is thus “not the self-consciousness of ‘natural state’ of the actor but, rather, its relations with other actors through what Latour (1993) calls alternatively the process of delegation or ‘the pass’ (as in passing a football, or handing something off to someone)” (Latour 1993: 33). Since identity is not part of the amodern episteme and agency is a category always in motion, the networks, which form the basis of inquiry, are both contingent (i.e. not determined, permanent, or universal) and emergent. Such a system is never closed and the mode of analysis “focuses on real-time analyses, seeing how the network unfolds and transforms from the perspective of one of its actors” (Latour 1993: 32). Macgregor Wise’s main point of criticism of such an amodern analysis is that it tends to perpetuate existing structures of power, since it mostly describes the space of established power, rather than the space of resistance – the

actors who are likewise missed by the analyst, such as secretaries, workers (primarily female) in Third World sweatshops, and the like. These workers, like the maintenance crew or the physically challenged in the case of Latour’s doorcloser, are often dismissed from the analysis, further compounding their marginal status. One reason for this might be the tendency in actor-network analyses to focus on the system builder, that is, a person in power, rather than an actor in a more subordinate or marginal position.

(Macgregor Wise 1997: 34)

That is, while ANT is free from interpretation, it is also in danger of ignoring the “violence of exclusion and those silenced by the network” (35). The problem with agency as category of analysis is that ‘all agency is equal’. ANT does not offer a way to address *differences* in the distribution of agency. Macgregor Wise uses the example of a train to illustrate how a network is subject to various influences where agency is distributed according to economic forces:

The assemblage [of engine driver, fuel, track, wheel, landscape etc.] is not a random configuration but is coded according to particular hegemonies such as the capitalist market, which influences which points will be connected and what the trains will carry...our vision is situated. We will never grasp the assemblages as a whole, nor should that be the objective of our analysis...Our analysis must resist totality and recognize that vision is partial.

(Ibid: 58)

The key issue for Wise is to add a political dimension to an actor-network analysis. Authors such as Star (1991) and Haraway (1986) have similarly attempted a more politicised version of ANT. In her critique, Haraway (1986) emphasises the

abject failure of the social studies of science as an organized discourse to take account of the last twenty years of feminist inquiry...For all of their extraordinary creativity, so far the mappings from most SSS scholars have stopped dead at the fearful seas where the worldly practices of inequality lap at the shores, infiltrate the estuaries, and set the parameters of reproduction of scientific practices, artifacts, and knowledge.

(Haraway 1986: 333)

Overall, both Haraway and Macgregor Wise address important gaps within ANT. Since the main mode of actor-network analysis is description rather than interpretation, an evaluative stance is mostly absent. However, there are various ways of addressing power issues in ANT. Rather than examining hegemonic and successful networks, the focus of study could be either on marginalised networks or on unsuccessful ones, that is, networks that have not achieved stability and duration. Alternatively, Mcgregor Wise suggests to not only analyse the process of delegation within a network but also to examine the reasons why one particular actor finally gets to speak. Similarly, a study of networks could centre on the *reason for exclusion* of actors from certain networks and thus, exclusion from power. This concern with issues of power is why Macgregor Wise turns to a Deleuzian analysis of technology as corrective to ANT. That is, he takes the amodern notion of technology as starting point, adding “to this methodology an ontology, a politics, and a sense of the formation of the social itself” (Ibid: 58). In a Deleuzian analysis of technology,

technology is defined as an abstract machine consisting of Technology (content; use of tools) and Language (expression; use of symbols). These two articulations form a machine, producing instances of regularities, which can be felt as real effects. The analysis, according to Macgregor Wise, can trace these regularities and point out where and why a flow suddenly becomes organised: “A machine, then, is an apparatus of functions that redirect flows...A function is a singularity, *a point at which a flow suddenly becomes organized*” (Ibid: 64, emphasis added). In this configuration, human social space consists of both what subjects directly manipulate physically (Technology) and that which they manipulate incorporeally (Language), and is produced through contraction or habit. Macgregor Wise argues that this Deleuzian corrective of ANT changes the conception of agency as given and therefore introduces a political and ontological dimension to agency:

The introduction of abstract machines is a corrective to Latour and actor-network theorists in that it is through the machines that actors are comprised, distributed, valued, lived, and connected. Agency is not given, but is distributed, differentiated, and territorialized. The resultant actor-network can then be examined and analyzed without falling back on the problematic notion of a rational network builder.

(Ibid: 70)

One area that lends itself particularly well to such an analysis of technology, according to Macgregor Wise, is the area of new media, especially IT and communication. This field embodies both technology (a device) and language (content broadcast or transmitted). Using the example of cybercommunities, he points out that the technological agents that participate in their construction are being overlooked:

the computers, hardware, software, and wiring technologies themselves contribute to the shape, character, and inclusiveness of the group. Minimally, these constraints are economic (affording a computer, phone bill, and connection fee to a local Internet provider), spatial (literally having a room to put the computer in, or space in that room), and leisure-related (one must have the *time* to contribute).

(Ibid: 73)

Overall, then, Macgregor Wise proposes an analysis of technology, which, while based on actor-network theory, requires a Deleuzian corrective in order to enable an evaluative stance and to create room for resistance. He argues that resistance is based on habits, since habit is not simply the same action repeated, but is always slightly different:¹⁷

Resistance must take into account our own habits. Habits are not simply repeated action, not simply a repetition or the endless recurrence of the status quo because each iteration, each action, is unique... The *difference* of habit (a *positive* difference) is our foothold; it is our margin of maneuver.

(Ibid: 76)

Resistance, while being a human category, does not reintroduce the category of identity. It is instead a function of a network and it depends on Deleuzian categories of “on vectors, lines of intensity, drawn across both language and technology and from them to other strata; opening technologies onto other technologies, other languages, other forms, and so forth” (Ibid: 75). Macgregor Wise’s theory of technology and social space is an attempt to reconcile ANT with a focus on human social space. Instead of a neutral description of networks, he proposes a methodology of ANT that looks at the reasons and motivations for a certain distribution of (human) agency. The main problem with his analysis is that it is at times incomprehensible, and his use of Deleuzian ontology as a corrective to ANT’s failure to address politics renders his theory too abstract for real political intervention. Overall, his book is an interesting overview of various possible epistemes of technology, while his project to inject political concerns into theory is only partly successful and somewhat lost in the network of his discourse.

¹⁷ For a similar argument regarding resistance in the form of repetition or (re) iteration see Butler (1993).

2.3. New Media and the 'Information Age'

The greater visibility of technologies over the last few decades and particularly, the commercial advent of the personal computer and the Internet, has led many theorists to designate contemporary society an information society. This chapter outlines some of the key concepts with regard to this perceived 'information age' and places the discussion in a wider context of configurations of (media) technologies and (human) society.

2.3.1. Information

As we have seen in the earlier attempt to define new media, the question of new media is closely related to the discussion surrounding the 'information society'. In particular, both academia and wider society have been quick to designate our present society as one where information takes centre stage. However, Frank Webster (2002) points out the difficulties with such an argument and especially the category of information, since its definition is used imprecisely and in a great variety of different contexts. For example, some argue for an 'information society' on the grounds of increased technologies and technological innovation (especially computers and the Internet, but also other digital media such as video game consoles, mp3 players, etc.), resulting in a greater quantity of informational technologies.¹⁸ Others see the key to it in occupational change with a high increase in informational work. This approach in particular has been favoured by sociologists such as Daniel Bell (1973) and Manuel Castells (1989, 1996). In this prominent and widely recognised analysis of an information society, the focus is on a shift from labour-intensive and material-based production to knowledge-intensive, immaterial production. Information here is defined as theoretical knowledge and Bell argues "what is radically new today is the codification of theoretical knowledge and its centrality for innovation" (1979: 189). In Bell's analysis, theoretical knowledge lies not only at the heart of innovation, but also dominates social and political affairs. The discussion surrounding information as knowledge and the contention that theory has become more relevant and higher valued than practice is shared by a number of theorists on contemporary society (Webster 2000, Giddens 1994). The centrality of knowledge has led some to

¹⁸ See Rheingold (1991), (1993).

designate contemporary society a knowledge society, rather than information society (Stehr 1994). While a changing and more complex relationship to knowledge is indeed a key feature of contemporary society, such an analysis rests on a definition of information as knowledge. There are however many alternative possible definition of this imprecise term – Zhang Yuexiao (1988: 400; cited Webster 2002) reports that there have been approximately 400 conceptions of information outlined by theorists and researchers from a variety of different fields and cultures. Equating information with knowledge is thus only one possible way to define an information society.

Scott Lash (2002) presents another possible configuration of information. He distances himself from a definition of ‘information society’ that focuses on a change in economic production (Bell 1973, Castells 1989, 1996). For Lash, information is instead a *sociocultural* category like narrative or discourse. He argues that we live in a society with an increased focus on information, as opposed to narrative or discourse, rendering the qualities of our society increasingly informational. The qualities of information are “...flow, disembeddedness, spatial compression, temporal compression, real-time relations” (Lash 2002: 2). Whereas discourse (for example a philosophical text) is comprised of conceptual frameworks, serious speech acts and legitimating arguments, information is compressed: it does not leave time for reflection:¹⁹

It [information] is very different from narrative or discourse. The bit of information has its effect on you without the sort of legitimating argument that you are presented with in discourse. Information here is outside of a systematic conceptual framework.
(Ibid: 3)

Information as a type of material culture declines quickly in value once it has been transmitted – it is not durable but instead constantly new. Like McLuhan, Lash differentiates between old media (such as book) and new mass media (such as television). While old media are discursive media, he argues that mass media have as

¹⁹ He provides the example of a match report written for the tabloid *The Sun* that must be ready in approximately 90 minutes after the game and is thus produced in ‘real time’, leaving no time for reflection.

paradigm not narrative, discourse, or representation, but instead information. Because of their discursive quality, old media such as painting, cinema, novel, and poetry require a reflexive attitude. New media such as telegraph, television, newspapers and Internet, on the other hand, are descriptive presentations devoid of deep thought. Lash calls both TV and personal computer 'information machines' (2002: 68). According to him, TV's characteristic content is information, exemplified by programmes such as news, sporting events, soap operas, and comedy. These informational contents decline quickly in value once they have been transmitted. Lash also contends that TV favours the glance over the gaze, since it is consumed under distractive conditions such as housework or communication with other family members. The glance is also the mode of viewing in new media and overall, in Lash's argument, it represents an informational mode of viewing (as opposed to old media's 'gaze'). In new media, according to Lash, the message is the main unit of information, as opposed to narrative or discourse (2002: 73). Informational media work not through discourse but through communications and facticity, where reflection is absent. Reflection is a property exclusive to discursive media. These media, in Lash's analysis, compress space but extend time, thus giving time for reflection on the part of producer and receiver. In contrast, new informational media work in temporal immediacy, across great distances: "They work over great distances in nearly no time at all" (Ibid: 74f). Lash's analysis of an information society is thus based on a great increase in the sociocultural category of information. For him, the information age is characterised by a disappearance of ontological structures and related logical and deep meaning. In its place is a form of everyday and contingent meaning, which is neither logical (i.e. classificatory), nor ontological, but instead empirical. Therefore, the distance between knowledge and practice disappears. Drawing heavily on Garfinkel's (1952, 1967 cited Lash 2002) empiricist phenomenology, Lash argues that "knowing no longer *reflects* on doing; instead, doing is at the same time, knowing" (Ibid: 17, emphasis added). Thus, knowledge loses its depth and becomes immediate and practical, while meaning is flattened and becomes informational. The second important reconfiguration in the information age, according to Lash, is that of subject and object. Similar to Latour and Haraway, Lash does not uphold a strict distinction between (human) subject and (technological)

object. Instead, he provides a definition of what he calls ‘technological forms of life’ that includes both natural and biological forms of life alongside social and cultural ones. The underlying argument is his contention that the subject is no longer outside of, or transcendental to other forms of life but instead, various forms of life intermingle and are networked with one another:

I operate as a man-machine interface – that is, as a technological form of natural life – because I must necessarily navigate through technological forms of social life.

(Ibid: 15)

That is, there is no longer a separation of subject and object, and, similar to Haraway’s cyborg, the ‘human’ body is open to flows of information and communication (Ibid: 16). One of the key characteristics of these technological forms of life, according to Lash, is that they are non-linear. The first aspect of this non-linearity is compression. That is, instead of linear units of meaning such as narrative and discourse, the technological age has short and compressed units of meaning – units of information and communication. Importantly, Lash does not consider the increased amount of signals, ads, and the overall excess and bombardment of signs as ‘information overflow’. For him, this excess does not automatically constitute information. Instead, this is a stage of chaos or noise prior to a stage where it turns into information:

It only becomes information when meaning is attached to it. Information only happens at the interface of the sense-maker and his/her environment... If there is no meaning, then there is no information. Out there otherwise is just chaos or noise.

(Ibid: 18)

The second aspect of the non-linearity of technological forms of life is their acceleration – they are “too fast for reflection and too fast for linearity” (Ibid). This is reminiscent of Paul Virilio’s (1997) argument of the destruction of space. Virilio claims that this dromology has resulted in speed and time driving history, instead of space. Technology has collapsed space into time:

Space is no longer in geography—it's in electronics. Unity is in the terminals. It's in the instantaneous time of command posts, multinational headquarters, control towers etc. Politics is less in physical space than the time systems administrated by various technologies, from telecommunication to airplanes, passing by the TGV, etc. There is a movement from geo- to chrono-politics: the distribution of territory becomes the distribution of time. The distribution of territory is outmoded, minimal.

(Virilio 1997: 114)

Unlike Virilio, however, whose vision is highly dystopian and who mourns the loss of human agency, Lash does not subscribe to this position of technological determinism. For him, the breakdown of linear time merely results in a radical indeterminacy with a high degree of insecurity and contingency.²⁰ The third property of technological forms of life is that they are linked together not in a linear way but they form non-linear and discontinuous networks. Unlike social bonds such as national identity, which are held together by myths of origin, the socio-technical links of networks are held together by communication, for example, a televised football match, or an email exchange. Lash concludes that communication is at least similarly important, if not overriding information as key defining aspect of today's society (2002: 20).

Lash's account of the information age is problematic in a number of ways. While he claims that the information age has overcome dichotomies, replacing them with highly contingent sociotechnical networks, he introduces new dichotomies throughout his argument. For example, he differentiates between 'old' and 'new' media, representational culture and technological culture, the manufacturing age vs. the information age. Furthermore, his cultural history is moving along teleological lines: from manufacturing society (the past) to informational society (the present). On the other hand, he strongly argues that the key feature of the information age is what he calls 'adding on'. That is, while subjects and objects in the manufacturing society were linked by causality, this linear causal relationship is replaced by non-linear additivity and this society is one of conjunctions, of the AND (Ibid: xii). It is surprising then that his critique does not deploy the concept of conjunction in his

²⁰ See also Beck's 'risk society' (Beck 1992).

own analysis of media. It is problematic to separate discursive from informational media and this thesis argues that both media have conjunctive qualities – examples include a movie shown on TV, commercials shown before a movie, etc. In the same way, the information society has not replaced the manufacturing society. Here as elsewhere, it is more a case of ‘adding on’ of the information age to the manufacturing age. The main difference is that manufacturing labour is increasingly outsourced to poorer countries, while informational work has taken centre stage in Western societies.

Overall, the major flaw in Lash’s argument is that he does not apply his own theory (that of highly contingent networks and the information age of conjunction) to his analysis, weakening an otherwise interesting and original approach. The configuration of information as a sociocultural category (in distinction to discourse and narrative) is a useful insight into current cultural shifts. However, the ‘information age’ and information itself is more an add-on to a representational and manufacturing society, rather than a radically new age that breaks completely with the past.

2.3.2. Space

Within studies of media and informational culture, space is a prominent category in the analysis of new media’s ‘newness’. The widely used term ‘cyberspace’ (coined by William Gibson (1984) in *Neuromancer*) is indicative of a growing importance of space. The heterogeneous screen of a computer and the rise of the multiple-windowed interface in media, especially TV and computer, furthermore indicate an increasing significance of space over time. There are various ways in which space has been configured within discourses of technology and society and for many theorists of new media and informational culture, space and its collapse are at the centre of analysis. As we have seen earlier, Paul Virilio is one of the main theorists of the destruction of space and distance. For him, technologies work across great distances in an immediate timeframe; hence, space is no longer able to provide the distance necessary to uphold the subject-object separation, thus destroying human nature. Manovich (2001) insightfully contrasts Virilio’s position with Walter Benjamin’s (1999 [1937] cited Manovich 2001) account of technology’s destructive

impact on human nature. Human nature, in both Benjamin's and Virilio's account, is defined by spatial distance between observer and observed. Only through distance can the distinction between subject and object, which is the basis of the modern identity, be achieved. Both Benjamin and Virilio argue that technology and in particular, new communication technologies destroy this crucial distance. For Benjamin, this destructive new communication technology is film. He argues that film with its possibility of close-up brings the object and its 'Aura'²¹ closer spatially, destroying the 'respect for distance', which he considers a key humanising natural trait. For Benjamin, the industrial age has displaced objects from their original settings and now film, in collapsing distance and bringing everything closer, has destroyed Aura (Manovich 2001: 170ff). For Virilio, telecommunications similarly destroy or collapse physical distance. In his analysis, the fast transmission of information destroys concepts of near and far, horizon and distance, and erases the meaning of space. Thus, in Virilio's logic, the world has no depth or horizon but only real time. Both Benjamin and Virilio deploy a technologically deterministic point of view. These writers see the distance between the subject who is seeing and the object being seen as a fundamental condition of human perception. The desire to bring things closer, in their accounts, destroys objects' relations to each other and ultimately obliterates the material order altogether.

Overall, then, in a dystopian analysis of the collapse of space-as-distance, the destruction that started with cinema has now culminated in contemporary technological society. New informational media have destroyed space and thus substance, replacing it with contingency and the accident. According to Virilio, space as distance no longer exists. Instead, everything has become present and turned into real-time information.

Similar to theorists such as Virilio, Manovich (2001) argues that the key feature of new media is a changing configuration of space. Unlike Virilio's definition of space as distance, however, Manovich considers space as navigation, or, 'navigable space'. He argues that computers and especially computer games have foregrounded

²¹ A term coined by Benjamin to refer to the unique presence of a work of art, a historical or natural object.

navigable space as a new cultural form. For him, space, in new media, becomes a media *type* (2001: 251). The key feature of computer space is not its collapse, but instead its navigability. New media is defined by spatialisation.²² Manovich argues for a need to theorise navigable space. He offers two key ways of understanding this form of new media space, drawing on already existing concepts of the *flâneur* (*navigator*) – a European concept - and the *explorer* – an American one. These represent two different kinds of spatial attention. One is a more passive ‘wandering, total orientation’ (*flâneur/navigator*) while the other one constitutes an active, well-aimed ‘taking in’ of the partial, the small, the unexpected (*explorer*). Drawing on Walter Benjamin’s (1986 [1935]) account of the *flâneur*, Manovich argues that the navigable space, in this case, is a subjective one:

The navigable space is thus a subjective space, its architecture responding to the subject’s movement and emotion. In the case of the *flâneur* moving through the physical city, this transformation, of course, only happens in the *flâneur*’s perception, but in the case of navigation through a virtual space, the space can literally change, becoming a mirror of the user’s subjectivity.

(Manovich 2001: 269)

The concept of the *explorer*, on the other hand, is based on 19th century American writers such as Mark Twain and James Fenimore Cooper, whose characters in their novels explore hostile environments full of conflict.²³ Manovich argues that these two different types find their expressions in two different subject positions of new media users:

If the Net surfer, who keeps posting to mailing lists and newsgroups and accumulating endless data, is a reincarnation of Baudelaire’s *flâneur*, the user navigating a virtual space assumes the position of the nineteenth-century *explorer*, a character from Cooper or Twain.

(Ibid: 271)

²² For example the windowed interface; navigable space of video games; etc.

²³ For example a character such as Twain’s Huckleberry Finn. However, the image of the ‘cowboy’ in a typical American Western also exemplifies this type of *explorer*.

Additionally, Manovich argues that the ‘explorer’ figure is characteristic of computer games where ‘spatial exploration’ dominates.²⁴ Manovich’s concept of the flaneur is also deployed in Bolter and Grusin’s analysis of the subject position with regard to hypermedia, including hypermediated spaces such as the shopping mall. Bolter and Grusin refer to Tom Gunning’s study (1995) of the ‘Cinema of Attractions’ to outline the concept of flaneur and its relation to the glance as characteristic of hypermedia. Similar to Lash, the authors consider the glance as key mode of viewing in new media. In their analysis, however, the glance is not exclusive to new media but has its roots in the viewing mode of flaneur. Gunning describes how in the early cinema of attractions films were exhibited in Parisian cafés. Thus, films were one amongst many sights for the flaneur to take in while walking around Paris, glancing at various things. Thus, early cinema “remediated the city’s attractions” (Bolter and Grusin 1999: 174). Bolter and Grusin point out the affiliations of the Parisian flaneur with the postmodern flaneur of a hypermediated shopping mall, who similarly wanders around, glancing at various ‘attractions’:

...the mall celebrates the hypermediacy of our culture and calls forth a postmodern version of the flaneur, whose gaze, as she walks amid all these competing media, is a series of fragmented, sidelong, and hypermediated glances.

(Ibid: 175)

For Bolter and Grusin, computer space is a prime example of a hypermediated space and its user thus a flaneur, glancing as s/he wanders along inside navigable space.

Overall, the concept of space as navigation is useful for an analysis of computerised virtual space. However, it is important not to fall into what Bolter and Grusin (1999) call ‘theology of cyberspace’. This is a notion of cyberspace as immaterial, separate world, running parallel to the real world but not being part of it. In this account, the alternative world provides a unique space to live in – a master narrative of cyberspace and information technologies hailed as a new, immaterial world.²⁵ To

²⁴ Especially in Adventure Games such as *Tomb Raider* (1996), *Devil May Cry* (2001), *Prince of Persia: The Sands of Time* (2003).

²⁵ For a more detailed discussion, see Lister et al, 2003: 221ff.

counteract this argument of an utopian 'cyberspace' as parallel and separate world, Bolter and Grusin point out cyberspace's locatedness in a network of computers, economic status, and considerations of time and space. They argue that cyberspace does not exist separate from these networks. Instead, it is

...very much part of our contemporary world and ... constituted through a series of remediations. ...Like other contemporary mediated spaces, cyberspace refashions and extends earlier media, which are themselves embedded in material and social environments.

(Ibid: 182f)

A third conception of space in contemporary society is that of generic space or what anthropologist Marc Auge (1995) refers to as 'non-place'. For Auge, we live in an age of supermodernity characterised by non-places. As opposed to a place, which has historical connection and is concerned with identity, a non-place is a space without any of those connections and is instead 'lifted out' and generic. For Auge, while modernity produced places, supermodernity produces non-places – places which are not anthropological and which are lifted out of any connection to history or human identity. Examples of non-places are airports, railway stations, motorways, hotel chains, leisure parks, but also supermarkets, fast-food chains etc. Non-places are devoid of social relations and instead, identity is marked by solitude. Social relations are replaced by similitude. That is, the main feature of non-places is solitude experienced by individuals, which is directly linked to the appearance and proliferation of non-places and a characteristic of supermodernity (1995: 93).

'Anthropological place' is formed by individual identities, through complicities of language, local references, the unformulated rules of living know-how; non-place creates the shared identity of passengers, customers or Sunday drivers.

(Auge 1995: 101)

The key to non-places is that humans entering such places lose their usual identity and it is replaced by an identity of role-play that is not their own but shared:

...a person entering the space of non-place is relieved of his usual determinants. He becomes no more than what he does or experiences in the role of passenger, customer or driver.

...Subjected to a gentle form of possession, to which he surrenders himself with more or less talent or conviction, he tastes for a while – like anyone who is possessed – the passive joys of identity-loss, and the more active pleasure of role-playing.

(Ibid: 103)

Importantly, Auge does not see places and non-places as mutually exclusive. Instead, non-places can be found in places and vice versa (Ibid: 107). While Auge's interest lies in anthropological concepts of space where non-places are intimately related to an increase of technology (for example motorways, airports, etc.), both Lash and Bolter and Grusin deploy the concept in their analysis of the information age and new media respectively. For both Lash and Bolter and Grusin, the Internet is a non-place. Lash argues that it is a network that is lifted out and characterised by non-identity. Bolter and Grusin, on the other hand, discuss a concept of non-places that focuses on the aspect of mediation. For them, amusement parks and theme parks are highly mediated spaces. They are non-anthropological because they are defined primarily by the media they contain, rather than any associations with local history. For Bolter and Grusin, cyberspace is such a non-place, since it contains many of the characteristics of other highly mediated spaces:

Cyberspace is not...a place of escape from contemporary society, or indeed from the physical world. ...Cyberspace is a shopping mall in the ether; it fits smoothly into our contemporary networks of transportation, communication, and economic exchange.

(Bolter and Grusin 2000: 179)

Overall, the theory of non-anthropological, generic space is convincing. Non-places are on the increase; however, where Virilio would argue that they destroy and replace real anthropological space, Marc Auge, as well as Bolter and Grusin and Lash consider such non-places an add-on to anthropological places. Cyberspace neither has a historical connection nor is it concerned with identity. Instead, it consists of a network lifted out of any anthropological concerns,²⁶ and as such is a non-place in Auge's sense.

²⁶ See also 'Internet Cafes' that are similarly non-places, for example the chain *EasyInternet* Cafes.

2.3.3. Power

The issue of power is crucial in any discussion of the wider relationship of technology and society. Traditionally, in a manufacturing society, power was closely related to ownership of means of production and the related capitalist exploitation of people. This form of power has been the focus of a Marxist cultural studies tradition. Here, technology is considered an instrument, the use of which is dependent on the intentions and purposes of the groups using it. Thus, the focus of analysis is never on technology itself, but on its users and the power relationships arising out of its use. That is, power is related to ownership and human usage of technologies, for example, the ways technologies are mobilised for certain ends (Williams 1974).

In Latour's (1991) actor-network analysis, power is not a given (i.e. existing a priori) and not exclusive to human agents. Instead, it is a property of a network. He argues that the focus of analysis is to uncover structures of power and domination as the network constructs them: "By reconstructing networks it is argued that a full description of power and domination may be obtained" (Latour 1991: 103).

In Latour's account, to fully understand domination, one has to turn away from social relations only and include non-human actants that "offer the possibility of holding society together as a durable whole" (1991: 103). Power is closely related to the process of gaining reality: when a statement is uttered for the first time, it is unreal and it only becomes more real by means of involving other agents. Only then does it become more important, or as Latour states, 'clothed': "The accumulation ... gives the impression that we have gained some reality" (Ibid: 109). Thus, the analysis moves along the axis of derealisation/realisation. Power is located in a sociotechnical assembly and especially at the end of a sociotechnical chain. At the beginning of a chain, an action is unreal (hence without power), while at the end it has transformed and become real.²⁷ Power, in this account, is "not a property of any of those elements [i.e. the actors] but of a chain" (Ibid: 110). ANT has been criticised for being a-political, since the focus is on the *description* of a network, rather than its interpretation or evaluation:

²⁷ See also Butler (1993) on how iteration is a condition of reality.

There is no need to go searching for mysterious or global causes outside networks. If something is missing it's because the description is not complete.

(Latour 1991: 130)

There is, however, a political dimension to ANT, which is located in processes of delegation within the networks. Competing actors will try to recruit others to their own purpose, with the aim of stabilising a particular system (see Law and Callon 1992). Power, as described above, is located at the end of a chain – the longer and more successful a system of delegation, the more powerful its result. In this view, power manifests itself only at the end, and is an effect rather than cause (Latour 1991). Additionally, 'power' in ANT is not a final, essential state. Instead, an actor-network chain needs to be maintained, deployed, and repaired. According to Latour, the main mechanism to retain reality is to continually expand and add on to a chain (Latour 1991: 118).

Power and political struggle, while not at the centre of Latour's argument, is central to Donna Haraway's technofeminist approach (2.2.3.). Power, for Haraway, is located in structures of information and is exercised through exclusion from these structures. In Haraway's argument, power struggles centre on boundary objects – i.e. objects that have different meanings for different groups (Haraway 1986: 298). Examples of such boundary objects are nature, or the biological body. It is debatable whether or not these new forms of informational power *replace* old forms of power such as ownership of means of production and the related capitalist exploitation of people. Scott Lash (2002) argues that informational power is indeed the main form of power and is intimately related to an overall shift from a manufacturing to an information age. Following Haraway, Lash contends that old forms of power belonged to the manufacturing age, while new forms of power are a result of the information age. The main form of informational power consists of intellectual property (trademarks, copyright, etc.) and it works not through exploitation but through exclusion from the flows of information and communication. Lash argues that power becomes a question not of material but of intellectual property – of trademark, patent, and copyright:

If real property power in the means of production brought workers inside to be dominated by capital in relations of production, then intellectual property uses its power to exclude, through the standard in operating system software, in, for example, digital satellite television.

(Lash 2002: 75)

The power of exclusion, however, not only pertains to intellectual property, but it also extends to a general exclusion from what he calls the global elite. Those without power are excluded from the loops of the networks that constitute this global information and communication elite and have no access to sociotechnical global networks. Instead, the social class without information becomes increasingly marginal to global informational capitalism:

in the core the previously exploited, semi-skilled and ethnic minority working classes become increasingly irrelevant to informational-accumulation, which now takes place not on their backs but behind their backs. A self-excluding overclass leads to a forcibly excluded underclass.

(Ibid: 5)

While this underclass is excluded from within, capitalist exploitation is replicated in non-Western countries. Lash argues that intellectual work such as the design of a new car is still largely carried out in the core of Western society, while the work of production is contracted out to poor non-Western countries such as Indonesia or Thailand. Thus, while in Western societies, power is increasingly becoming informational, old forms of manufacturing power are replicated in global capitalism's periphery. Lash furthermore poses the question how political struggles are possible in an information age where power has become much more elusive and discontinuous. He argues that any subversion of power cannot stand outside the global informational networks but instead has to become part of it and itself add on to the networks and turn into its subversive supplement. Political struggle thus lies

in the power of the supplement to reconstitute the boundaries and reconfigure the objects. The critique of information lies in the supplement that can make its modest contribution to reconfiguring such material, human, biological and social forms of life.

(Ibid: 201)

Overall, informational forms of power that work through exclusion are not replacing old forms of manufacturing power. Instead, these new forms of power work as an add-on to existing forms of power. Furthermore, informational power structures are on the increase in Western societies, illustrated by the struggle surrounding copyrighted music and software and the challenge that the Internet has been posing to power as information. On the other hand, manufacturing forms of power centred on exploitation of a workforce have gained more prominence outside Western societies, with the outsourcing of manufacturing work to India and other countries. It remains to be seen how the new informational power will be negotiated and exercised and how these more elusive forms of power will assert themselves, as illustrated by the ongoing long struggle of the music industry's fight against music piracy. Chapter 2.5 discusses power struggles specific to new media in more depth.

2.3.4. Critique

One of the questions with regard to the study of new media is whether or not research in the area must deploy different and new methodologies and theories, or whether old and established methods are sufficient. The latter, according to Lievrouw and Livingstone (2002), is the most common approach within new media research. In particular, in the tradition of poststructuralist criticism, all forms of culture and media have been treated as 'text' with a widespread methodology of textual analysis. The contrasting position argues that new media do require a new and different critique since they challenge key concepts such as production and consumption, identity, and power (Lyman and Wakeford 1999 cited Lievrouw and Livingstone 2002). Arguing for a shift from a manufacturing to an informational society, Scott Lash too agrees that a new framework and theory is needed since discourse, on which traditional critique is based, is no longer the main cultural category. In Lash's theory, the information age has overcome the dualism of technology and society and that of subject and object, and replaced it with a socio-technical network. This has crucial implications for critique. Since the subject is no longer transcendental and no longer outside of the object of study, Lash argues that critique can similarly no longer stand outside. His book poses the question whether and how critique (in particular, critical theory) is possible if there is no longer any transcendental position

available for the critic. Given that discourse and narrative are increasingly replaced by information, Lash contends that critique can no longer operate from a transcendental, discursive framework. Additionally, since global information culture sits outside the dualisms of the manufacturing society, theory too must operate outside of dualisms:

The problem is that the global information culture tends to destroy these dualisms, tends to erase the possibility of a transcendental realm. It tends to destroy the fibre of the ground as we are lifted out from the grain of social relations into networks. It tends to erase differences between the same and the other, as national boundaries are questioned and the boundaries between human and non-human nature and culture are challenged.

(Lash 2002: 9)

It is useful for an understanding of Lash's argument to consider and contrast his concept of the earlier manufacturing society against the information society. Since the manufacturing society was based around dualisms and the problem of being (i.e. the Cartesian problematic of the subject/object split), Ideologiekritik and its successors German dialectics and French poststructuralist theory were the appropriate frameworks of theory. The critic was somewhat outside ideology, criticising from the outside. Critique itself was transcendental and discursive. However, Lash argues that since dualisms and transcendentals disappear in the information society, thought is no longer outside of what it criticises:

As transcendentals disappear, thought is swept up into the general plane of immanence with everything else. In the information age, cultural experience is displaced from the previously existing transcendental dualisms of the reader and the book, the concerto and the audience, the painting and the spectator. Culture is displaced into an immanent plane of actors attached or interfaced with machines. Now we experience cultural things not as transcendental representations, but instead as immanent things: as objects, as technologies.

(Ibid)

The logic of informationalisation is thus not dualist but immanentist: an "immanent plane of actor-networks: of humans and non-humans, of cultural objects and material

objects” (Ibid). Instead of the dualisms, the information society has the conjunction, the AND. Lash’s answer to the problem of critique in an information age is thus that critique can no longer be transcendental and exterior but instead, it must be *immanent to* the information order. He proposes that the information age require a new kind of theory, which he calls ‘media theory’. This ‘media theory’ is very different from a social or cultural theory of the media, which studies media from a sociological framework. The main quality of media theory is that it itself is part of media:

...sociocultural theory itself at the turn of the twenty-first century increasingly must take on the form of information, increasingly take on the form of media. ...I am not saying that social and cultural theory need to be increasingly about the media, or that they need to focus on the media as an object of research. But instead that *theory will be increasingly in the same genre as information, as media.*

(Ibid: 65, emphasis added)

Overall, the question whether or not new media do indeed need a new critique cannot be answered easily. It is difficult to imagine what a critique that is itself part of the flows of information might look like. Similar to the short lifespan of information, critique dates fast, since, after postmodernism, no essential position within critique is possible. However, critique as media object is difficult to imagine. If critique itself becomes an ‘add-on’ to the sociotechnical networks, then an actor-network methodology which places description and the pursuit of actors at the centre of analysis is one possible way towards a more informationalised critique. Indeed, description seems to be one of the key intellectual modes of critical work in a society where information is a significant sociocultural category.

2.4. New Media Theory

2.4.1. Introduction

The previous chapters have outlined the context and mapped some key concepts pertaining to the study of new media. It was observed that much of its discourse is

embedded into the wider discussion surrounding technology and society, and it was found that there are multitudinous approaches and different solutions to this problem. While it is beyond the scope of this thesis to explore and discuss all these different positions, an understanding of this background is nevertheless essential to any study of new media. In what follows, this background knowledge helps shed light on two key texts of new media theory.

2.4.2. New Media: A New Language?

Lev Manovich's *The Language of New Media* (2001) is an attempt to provide a single theory of new media. His book argues for a specific language of new media that is informed mainly by cinema. The key to Manovich's theory of new media is his contention that the personal computer has become the main cultural interface, through which all culture is now filtered. In his account, computers have a cultural impact similar to the printing press in the fourteenth century and photography in the nineteenth century, only that new media's impact on society is considerably greater. Manovich, similar to many other cultural theorists, clearly favours a technological deterministic view. He sees society in the middle of a 'new media revolution', where all culture is shifting to computer-mediated forms of production, distribution, and communication (Manovich 2001: 19), and where all forms of culture are mediated through computers:

As the window of a Web browser replaced cinema and television screen, the art gallery wall, library and book, all at once, the new situation manifested itself: All culture, past and present, came to be filtered through a computer, with its particular human-computer interface.

(Manovich 2001: 64)

Computers and their cultural interface are at the centre of this perceived cultural shift. According to Manovich, the new interface erases traditional distinctions between different media objects but also between time and space, since the standard 'cut and paste' operations of any software running under a modern GUI²⁸ can be applied to digital images as well as digital audio and video, across a timeline but also

²⁸ Graphical User Interface.

across regions of space.²⁹ Manovich argues that the characteristics of the cultural interface and new media objects such as Web pages, CD-Roms, and computer games are influenced by older media and that the language of new media is derived from already existing cultural forms: cinema, printed word, and a general-purpose human-computer interface. Of these cultural forms, Manovich singles out cinema as the one most important interface to shape new media's cultural interface:

Element by element, cinema is being poured into a computer: first, one-point linear perspective; next, the mobile camera and rectangular window; next, cinematography and editing conventions; and, of course, digital personas based on acting conventions borrowed from cinema, to be followed by make-up, set design, and the narrative structures themselves.

[...]

Cinematic means of perception, of connecting space and time, of representing human memory, thinking, and emotion have become a way of work and a way of life for millions in the computer age. Cinema's aesthetic strategies have become basic organizational principles of computer software. The window into a fictional world of a cinematic narrative has become a window into a datascape. In short, what was cinema is now the human-computer interface.

(Ibid: 86)

For Manovich, the most aggressive transformation of a cinematic interface into a cultural interface is in the realm of computer games. His theory is problematic in a number of ways. First, it suggests a unidirectional influence of cinema on new media. Following McLuhan's dictum that each new medium's content is that of an earlier medium, his main argument is that the content of computer is cinema. For Manovich, new media is a new form of cinema: "Cinema, the major cultural form of the twentieth century, has found a new life as the toolbox of the computer user" (Ibid: 86). Only in a later part of the book does he look into some influences of new media on cinema, however, the relationship of both media is never reciprocal or mutually constitutive, and nowhere does he challenge the separation of different cultural forms in general. This thesis argues that with the advent of digital film and digital cinema projection, as well as digital TV, it is difficult to uphold the separation of new and old media, and the classificatory boundaries are blurred. Secondly, while

²⁹ For example, Adobe *Premiere* (digital non-linear video editing), Adobe *Photoshop* (digital image manipulation), and Syntrillium's *Cool Edit Pro* (digital audio editing).

applying the concept of 'cinema' in a number of different contexts, Manovich does not define his use of 'cinema' but instead applies it freely in rather different contexts. For example, 'cinema' sometimes refers to cinematic language, sometimes, to cinema history and in yet other contexts 'cinema' is used synonymously with traditional Hollywood film. Lastly, singling out cinema as the one major influence on new media language is too simplified and cannot explain the complexity of new media's cultural interface. Instead, new media and the cultural interface should be considered more in the context of the growing importance of visual culture over text-based culture.

Regarding the aesthetics of new media, Manovich argues that computer-based imagery tries to emulate traditional photo and film images, in particular, their realism. For him, cinematic reality functions as guideline and ideal for computer-based visual culture. In this account, the problem with regard to computer-generated images, however, is that they are not cinematically real but hyperreal since they are independent of analogue technical constraints such as focus:

The synthetic image is free of the limitations of both human and camera vision. It can have unlimited resolution and an unlimited level of detail. It is free of the depth-of-field effect, this inevitable consequence of the lens, so everything is in focus. It is also free of grain – the layer of noise created by film stock and by human perception. Its colors are more saturated, and its sharp lines follow the economy of geometry. From the point of view of human vision, it is hyperreal. And yet, it is completely realistic.

(Ibid: 202)

Because of the hyperreality of digital images, various operations including adding blur effects or 'film grain' filters have to be performed, thus downgrading the image so that it resembles filmic or photographic reality.³⁰ While the aesthetic level of computer-generated images is thus cinematographic, the operations performed on them are driven by software. Overall, Manovich concludes that computerised visual culture consists of three distinct levels: "...cinematographic in its appearance, digital

³⁰ One of Manovich's examples is *Jurassic Park* (1993). Here as in other films, computer-generated graphics are blended with traditional film and as a consequence, the computer-generated image has to be downgraded in order for it to blend in with the film's 'imperfection' and graininess.

on the level of its material, and computational (i.e. software driven) in its logic” (Ibid: 180).

The major aesthetic strategies of new media, according to Manovich, are derived from early cinema and the ways in which limitations and difficulties encountered by a new medium impact on its aesthetic possibilities. For example, Manovich acknowledges the extent to which aesthetics of digital moving images such as *QuickTime* movies on CD Rom have been informed by hardware limitations. He sees the aesthetic strategies affiliated to early and avant-garde cinema:

Because of these particular hardware limitations, the designers of CD-ROMs had to invent a different kind of cinematic language in which a range of strategies, such as discrete motion, loops, and superimposition – previously used in nineteenth-century moving-image presentations, twentieth-century animation, and the avant-garde tradition of graphic cinema – were applied to photographic or synthetic images. ... The photographic and the graphic, divorced when cinema and animation went their separate ways, met again on the computer screen.

(Ibid: 311)

Manovich furthermore argues for an improvement of digital moving images due to technological advancement, similar to the technological progression that followed the emergence of cinema a hundred years ago:

Indeed, as the speed of computers keeps increasing, CD-ROM designers have been able to go from a slide-show format to the superimposition of small moving elements over static backgrounds and finally to full-frame moving images.

(Ibid: 313)

Due to such technological circumstances, Manovich singles out the loop as one key aesthetic form of new media. The main reason for the use of looped actions pertains to technical limitations such as storage (similar to 19th century pro-cinematic devices) or processing power. Examples of formats using loops are *QuickTime* movies and computer games – in the latter, character motions are looped since real-time rendering each time is technically impossible. Another aesthetic property of new media, according to Manovich, is an emphasis on spatial montage and a

spatialisation of time. Unlike traditional cinema, which is driven by a logic of replacement and a temporal timeline (one shot replaced by the next one), digital media foregrounds space – “the logic of addition and coexistence” (Ibid: 325). This spatialisation of time is characterised by the coexistence of visual information, resulting in an aesthetic of density, that is, an excess of information across space. Manovich furthermore emphasises that the aesthetics of new media are driven by code. He argues that a film such as *Star Wars Episode I – The Phantom Menace* (1999) is abstract in that it consists mainly of computer code – “two hours worth of frames made from a matrix of numbers” (Ibid: 331). Manovich stresses that new media change our perception of an image from that of a passive object that we look at (as mere viewer) to an active user of an image. That is, images are no longer separate and self-contained aesthetic objects, but instead, new media images are

something the user actively goes into, zooming in or clicking on individual parts with the assumption that they contain hyperlinks (for instance, imagemaps in Web sites)

(Ibid: 183)

Manovich’s account of the aesthetics of new media is problematic in a number of ways. First, it is too generalised to single out the concept of ‘cinematic reality’ as guideline for both cinema and new media aesthetics. Recent examples of Hollywood film such as *Charlie’s Angels: Full Throttle* (2003) and *Kill Bill: Volume I* (2003) illustrate a growing importance of the aesthetics of hyperreal spectacle, where cinematic reality is no longer the primary concern. Instead, these films point to a growing interrelationship of new media genres and cinema by using impossible action sequences and moves that are characteristic of computer and video games (for example *Prince of Persia – The Sands of Time* (2003)). That is, the unidirectional influence of cinematic realism onto new media genres is a one-way and unsuccessful attempt to explain the underlying motive of new media aesthetics. In addition, many new media forms do not strive for cinematic realism – a computer game genre such as Role Playing Games (RPG) strives to create a fantasy world independent of realistic conventions. New media aesthetics such as the ‘cut out 2d look’, facilitated by Macromedia’s *Flash* software, has had a great cultural influence on media

aesthetics (series such as *South Park*). Additionally, it is unclear how Manovich defines a digital image. Is it an image created entirely on a computer, such as a 3D animation, or does it also include film shot on digital equipment and subsequently imported into a computer? Media such as digital TV channels furthermore illustrate the difficulty in separating new media from old media and in demarcating where old media end and new media begin. Overall, Manovich's argument for cinematic realism as guideline for both cinema and new media has been challenged in recent years by the growing interrelationship and exchange of aesthetic forms of not only digital media and cinema, but also television and other media forms. Here as in other instances, it becomes apparent that Manovich's arguments, while interesting and partly valid at his time of writing (1999-2000), have quickly become dated.

Similar to his take on aesthetics, Manovich's theory of new media production is informed by the discourse of the new. For him, production takes place mainly via the operations of selecting and compositing. He argues that authorship in new media is based on selecting from a pre-defined library and from menus, filters, and plug-ins (i.e. what is already given by software). He furthermore sees this operation of selection reflected in society as a whole:

Whether assembling an outfit, decorating an apartment, choosing dishes from a restaurant menu, or choosing which interest group to join, the modern subject proceeds through life by selecting from numerous menus and catalogs of items.

(Ibid: 126)

The key to Manovich's understanding of selection is his somewhat romantic notion of creativity that relies on original creation. That is, he mourns the fact that 'originality' can no longer be achieved since creation in digital media is based on selection from pre-defined menus. Because of this, he contends that software such as *Photoshop* where everything is predefined exercises a "new form of control, soft but powerful" (Ibid: 129). Manovich is thus unable to conceive of the operation of 'selection' (for example in web navigation or an application such as *Photoshop*) as being creative in any way:

Paradoxically, by following an interactive path, one does not construct a unique self but instead adopts already pre-established identities. Similarly, choosing values from a menu or customizing one's desktop or an application automatically makes one participate in the "changing collage of personal whims and fancies" mapped out and coded into software by the companies.

(Ibid: 129)

His equation of the operation of selection with a loss of originality is problematic in a number of ways. First, his conception of creativity as original process of creation is based on a concept of identity where an artist is the creator of his or her piece of work and thus on romantic notions of a subject-artist based on the Cartesian subject, with its core separation of subject (artist) and object (the work of art). This type of creation or authorship has long been contested by poststructuralism (Foucault 1969, Barthes 1968). Secondly, equating the operation of selecting with unoriginality is unable to explain the creativity of sampling or electronic music, and artists such as laptop musicians.³¹ Furthermore, Manovich's assertion that the operation of selection is a key defining characteristic of the 'computerised' society can be contended in two ways. First, the process of selection as key to aesthetic creation has a long tradition in the art of the ready-made, for example Duchamp's *Fountain* (1917). Additionally, the favouring of selection of ready-made objects over the creation of originals is not unique to the 1980s emergence of computerisation. As Manovich himself admits elsewhere (Ibid: 29), the concept of assembly line, which characterised the industrial revolution, already favoured the concept of an object that is created out of ready-made parts rather than individually from scratch.

The second operation of new media production, according to Manovich, is 'compositing'. He argues that 'compositing' is closely related to the operation of 'selection' – it is the next step in the production of a new media object:

Once all the elements are ready, they are composited together into a single object; that is, they are fitted together and adjusted in such a way that their separate identities become invisible.

³¹ See Ohlsson (2005) for an interview with a laptop musician.

(Ibid: 136)

Similar to the operation of selecting, Manovich here too argues that compositing is an original defining feature of new media production, neglecting the fact that the concept of compositing was a key feature of the industrial revolution and assembly line production.³² Instead, he considers compositing a defining characteristic of computer culture:

Digital compositing exemplifies a more general operation of computer culture – assembling together a number of elements to create a single seamless object.

(Ibid: 139)

While the first two operations are more specifically related to creating new media, the process of new media consumption is not specifically defined as separate to its production. Instead, according to Manovich, new media's consumption is closely related to its production. He contends that in the information society, there is a closer relationship not only between work and leisure (since both use the same interface) but also between consumer and producer - "producers of cultural objects and their users" (Ibid: 119). This is mirrored by the closure of the gap between the equipment used by professionals and amateurs – many applications are used by both (*Word, Internet Explorer, After Effects, Photoshop, etc.*). He uses the example of computer games to illustrate how a user is part of a game's production, for example, when using a level editor, or when entering cheat codes, which modify a game's defaults. The blurring of boundaries between work and leisure and the producer and consumer of new media leads Manovich to conclude that computers are a prime example of postmodern authorship. He furthermore argues for a clear connection between postmodern aesthetics and 'computer culture'. This computer/postmodern aesthetic, according to Manovich, is characterised by smoothness and continuity since a composite erases boundaries and blends separate elements into a smooth whole. While on the one hand he celebrates 'postmodern authorship' and the blurring of

³² This argument could also be used to describe the process of cooking, for example. A soup is created out of separate elements. Once the soup is cooked and blended, it constitutes a whole where the separate elements can no longer be identified.

boundaries, he simultaneously holds on to a humanistic approach to media in general. Manovich struggles to explain the relation of technology and society without falling back onto a binary viewpoint where both technology and society exist in separate, mutually exclusive realms. The main underlying argument of his book is that we are in the middle of a 'new media revolution' (Ibid: 19) and that technology is increasingly determining our behaviour. In this new society ('the computer age' or 'information society'), Manovich contends that within new media production, the operations of selecting and compositing also influence and change society:

The communication between the larger social world and software use and design is a two-way process. As we work with software and use the operations embedded in it, these operations become part of how we understand ourselves, others, and the world. Strategies of working with computer data become our general cognitive strategies.

(Ibid: 118)

Overall, Manovich's argument and theory of new media is rooted in a Cartesian subject/object dichotomy and he sees human subjects as well as media objects as ontologically separate entities that form mostly hierarchical relationships. However, his account is contradictory. His main argument is that the 'new media revolution' has led to an information society with the result that all culture, past and present, is now filtered through a computer (64). To that end, he talks of new forms of soft control by software such as *Photoshop* that determine what choice a user has. On the other hand, Manovich argues for an increased human activity, thus contradicting his own underlying technological determinism. When writing about the 'human-computer interface', he implies an active user who can not only 'speak the language of the interface' but also use it to perform tasks such as sending emails, running applications, etc. (79). In other instances, he foregrounds an increased activity of human users of new media, for example, with regard to teleaction, which he defines as physical presence in a remote environment and the human ability to achieve effects at a distance. Here, human users of new media are capable and active operators of technology, rather than passive human beings controlled and determined by it.

The overall problem with the book is its claim to present a theory before its time. *The Language of New Media* was first published in 2001, even though some of its sections are from as early as 1992 and 1995, and the editing of the book, which is partly a collection of already existing essays was done “between July 1998 and November 1999” (Ibid: xxxviii). At times, it seems that Manovich’s attempt to present a ‘language of new media’ at this early stage is a project that is necessarily incomplete. Throughout the book, Manovich himself is aware of the fact that the development of ‘new media language’ in general and ‘cultural interface’ language in particular is at a very early stage. He does insist however that “we are witnessing the emergence of a new cultural metalanguage, something that will be at least as significant as the printed word and cinema before it” (Ibid: 93), a claim that, as we shall see, is not shared by other theorists of new media language.

2.4.3. New and Old Media: Remediation

Unlike Manovich who claims that new media is a form with an entirely new language breaking with past cultural forms, Bolter and Grusin’s *Remediation: Understanding New Media* (1999) examines new media as a category in interplay and intermediation with older media. According to Bolter and Grusin, digital media are not defined by ‘making a break’ with all other forms of media that have gone on before. Instead, they continue to be in a dialectic relationship with older forms of media and there is no radical break between the different media forms. Traditionally, each new medium has always been in dialectic with older forms and digital media simply follow this tradition. According to Bolter and Grusin, what is new about digital media is the way in which it *remediates* older media.

The key process of interplay between different media forms is what Bolter and Grusin call *Remediation*. Remediation is composed of the double processes of immediacy on the one hand, and hypermediacy on the other. Immediacy refers to an authentic, transparent experience that media are continually trying to improve with the aim of hiding the fact that these ‘authentic’ experiences are mediated, by using a style of photographic realism. Hypermediacy, on the other hand, refers to the

simultaneous consciousness of a medium and thus its opacity. This increased opacity is caused by the multiplicity of media, resulting in an awareness of media's materiality. Within new media, hypermediacy refers to a visual style that mixes different media forms and foregrounds fragmentation and heterogeneity, resulting in an increased awareness of the process of mediation or the medium itself. An example for the double process of remediation is a virtual reality headset. Such a headset tries to remove the medium by immersing a user in its reality while at the same time, the device to experience this immediacy is extremely opaque – the user has to put on and wear the medium of headset and/or dataglove or datasuit in order to experience immediacy in the first place. Bolter and Grusin convincingly illustrate this point use the film *Strange Days* (1995). In *Strange Days*, the plot evolves around a highly advanced virtual reality headset with which people can live other people's experience as if it was their own. The software consists of recorded disks of someone else's experience that are inserted into the headset hardware and transmitted straight to the brain. Thus, the experience is absolutely immediate– it is an exact copy of someone else's experience, felt as if it was one's own, and thus transparent. However, this transparency is flawed by the fact that users have to physically put the headset on and insert the tape, thus making them conscious of the act of mediation. Bolter and Grusin contend that this double logic of remediation – attempts to provide realism and hiding media that are counteracted by the multiplication of media – lies at the heart of our culture today:

Our culture wants both to multiply its media and to erase all traces of mediation: ideally, it wants to erase its media in the very act of multiplying them.

(Bolter & Grusin 1999: 5)

Crucially, Bolter and Grusin do not consider remediation a new and defining process exclusive to digital media. Instead, in their discussion and definition of the concepts of immediacy, hypermediacy, and remediation, they align their historic approach with that of Foucault (1977b) and the concept of 'genealogy'. That is, rather than deploying a teleological and linear account of history, they argue for a history of affiliations or resonances which does not attempt to discover 'origins':

What we wish to highlight from the past is what resonates with the twin preoccupations of contemporary media: the transparent presentation of the real and the enjoyment of the opacity of media themselves.

(Ibid: 21)

In their view, the practice of remediation started around the Renaissance and the appearance of linear perspective in painting. Within Western visual culture, 17th century painting sought to place viewers in the same space as the object viewed, thus trying to achieve immediacy and denying the presence of the medium (i.e. the painting and the picture frame). Bolter and Grusin show that, while ‘hypermediacy’ has taken centre stage within digital media today (the World Wide Web, desktop interface, multimedia programs etc.), the visual style has a history relating back to as early as medieval times:

However, the same logic is at work in the frenetic graphic design of cyberculture magazines like *Wired* and *Mondo 2000*, in the patchwork layout of such mainstream print publications as *USA Today*, and even in the earlier ‘multimediated’ spaces of Dutch painting, medieval cathedrals, and illuminated manuscripts.

(Ibid: 31)

Overall, then, remediation is affiliated to earlier conventions within Western visual culture and has gained increased prominence within contemporary culture, thus helping to establish “the identity of new digital media” (Ibid: 54). Especially hypermedia styles such as excess of information and multiplication of different applications feature prominently in the identity of new digital media such as computers and the Internet. Remediation can work on a number of different levels, in particular, concerning a medium’s transparency. On one end of the scale, an electronic medium might remediate an older medium attempting to offer the same experience to viewers, only digital. An example would be a collection of paintings or photographs on a CD-Rom. The electronic medium here attempts to be transparent (i.e. non-existent) and simply offer its content in electronic form, so viewers can view a gallery collection or their holiday photos on CD-Rom and thus, a computer

screen. However, Bolter and Grusin argue that this is never fully achieved since hypermediacy gets in the way:

The computer always intervenes and makes its presence felt in some way, perhaps, because the viewer must click on a button or slide a bar to view a whole picture or perhaps because the digital image appears grainy or with untrue colours.

(Ibid: 45f)

On another level, creators of electronic remediations might want to emphasise the difference to conventional media that they remediate, presenting themselves as an improved version. For example, an Encyclopaedia on CD-Rom will come with audio and video files, clearly emphasising these features as an improvement to the printed version.³³ Electronic remediation might also foreground its discontinuities, such as the possibility of remediating more than one medium simultaneously. One window could contain a word document, while another one contains an audio file and yet another one a moving image file. Buttons and windows control all the different remediations and users have to move among those: “The graphical user interface acknowledges and controls the discontinuities as the user moves among media” (Ibid: 47).

Since a user’s movement within a graphical interface is defined by an alternation between flux and discontinuities (clicking buttons etc. and then entering the media until another button needs to be clicked), the windowed interface is characterised not only by an alternation between agencies but also, related to that, an alternation of stopping and starting movement (Ibid: 47). That is, unlike with older media such as television or book, a user does not enter into a continuous experience and comes out the other end (the end of a book, the end of a film), but instead her experience is continually disrupted and stopped, only to start again. While remediation and especially hypermediacy have thus helped establish the identity of new media, Bolter and Grusin stress that remediation affects all other current media forms. They furthermore argue that at this historical moment all mediation is remediation, without subscribing to a perspective of linear historical development. That is, there is no historical progression in that new media are new because they remediate older media.

³³ Online dictionaries often offer audio pronunciation files, for example *Dictionary.com*.

Instead, Bolter and Grusin argue that the process of remediation works both ways: Not only do new media remediate older media, but also vice versa. TV refashions itself to look like the WWW – especially the news, as well as TV shows such as *24* (2001-present) with multiple screens and thus hypermediated excess; film incorporates computer graphics, for example *Terminator 2: Judgement Day* (1991). Rather than a linear progression of media, there is a genealogy of affiliations between all media to the extent that media forms can no longer be strictly separated historically: “No medium, it seems, can now function independently and establish its own separate and purified space of cultural meaning” (Ibid: 55). That is, a medium can no longer be considered in strict isolation, because all media refashion and remediate other media to some extent. The ‘new’ in new media thus merely refers to a new method and degree of remediation:

No medium today, and certainly no single media event, seems to do its cultural work in isolation from other media, any more than it works in isolation from other social and economic forces. What is new about new media comes from the particular ways in which they refashion older media and the ways in which older media refashion themselves to answer the challenges of new media.

(Ibid: 15)

Overall, then, digital media are not defined by ‘making a break’ with all other forms of media that have gone on before. Instead, they continue to be in dialogue with older forms of media and there is no radical break between the different media forms. Each new medium is always in dialectic with older forms and digital media simply follow this tradition. What is new about new media, in Bolter and Grusin’s convincing analysis, is the way in which it remediates older media and digital media’s “particular strategies for remediating television, film, photography, and painting” (Ibid: 50).

One of the consequences of considering all media in interplay and interrelation with one another is that they can no longer be considered as separate, clearly delineated media forms. The key to an understanding of these interrelated and networked media lies in Bolter and Grusin’s definition of a medium as opposed to technology. Any medium starts out as a ‘technology’ but becomes a ‘medium’ when and as it is

constituted by a network of technical, social, and economic contexts. That is, while technology refers to a more material, separate 'device', it becomes a medium on entering the above (technical, social, economic) networks. For example, the technologies of TV, film, computer graphics etc. are culturally recognised as media, due to the ways in which these technologies interact with each other. The technology of computer is only the latest manifestation of such a transformation from technology to medium:

In the past fifty years, we have seen the digital computer undergo this process of 'mediatization.' ... The computer could then become a medium because it could enter into the social and economic fabric of business culture and remediate the typewriter almost out of existence.

(Ibid: 66)

A medium is thus not defined by its technology. Instead, Bolter and Grusin offer the following definition: "...a medium is that which remediates" (Ibid: 65). Since a medium only exists in a network of technological, sociological and economic contexts, it is constituted not only by its content, but also its economic and social function – a medium is thus a hybrid "in Latour's sense" (Ibid: 67). That is, while technology is a distinct and distinguishable entity, a medium is not. Bolter and Grusin illustrate the hybrid nature of a medium with the example of the medium of film:

Whenever we focus on one aspect of a medium (and its relationships of remediation with other media), we must remember to include its other aspects in our discourse. In the case of film, for example, when we look at what happens on the screen (in a darkened theater), we can see how film refashions the definitions of immediacy that were offered by stage drama, photography, and painting. However, when the film ends, the lights come on, and we stroll back into the lobby of say, a suburban mall theater, we recognize that the process of remediation is not over. We are confronted with all sorts of images (posters, computer games, and videoscreens), as well as social and economic artifacts (the choice of films offered and the pricing strategy for tickets and refreshments). *These do not simply provide context for the film itself; they take part in the constitution of the medium of film as we understand it in the United States today.* We must be able to

recognize the hybrid character of film without claiming that any one aspect is more important than the others.

(Ibid: 67, emphasis added)

That is, media technologies themselves are not isolated from each other but form part of a network including physical, social, aesthetic, and economic agents. In the case of new media, the World Wide Web as medium is

not merely a software protocol and text and data files. It is also the sum of the users to which this protocol is now being put: for marketing and advertising, scholarship, personal expression, and so on.

(Ibid: 72)

The process of remediation thus has material and economic dimensions, as well as a social dimension.

Bolter and Grusin argue that each new medium has to 'justify' economically its existence by promising to refashion and improve media that are already available. Furthermore, the economic success of workers in a new medium depends on its acquired status.³⁴

A second economic dimension to remediation is the repurposing of a medium's content across other markets. For example, a blockbuster film such as the new *Star Wars* films (1999/2002), the *Matrix* Trilogy (1999/2003/2003), or *Finding Nemo* (2003) is not just a film but also packaged and marketed across as many markets as possible. Where *Finding Nemo* was repurposed for a fast food meal and surfaced briefly as mascot for washing powder, *Star Wars* has spawned numerous action figures. The medium is thus inseparable from the economic and material:

The goal is not to replace the earlier forms, to which the company may own the rights, but rather to spread the content over as many

³⁴ The example of the profession of 'web designer' illustrates this point. Initially, there was a scarcity of web designers and thus their status was high, coupled with great economic success. The author herself in 2000 considered a career in web design because of this. Since then, however, the status and economic success of web designers has somewhat declined due to a great increase in web designers coupled with a degradation of web design from highly specialised profession to a merely skilled profession.

markets as possible. Each of those forms takes part of its meaning from the other products in a process of honorific remediation and at the same time makes a tacit claim to offer an experience that the other forms cannot.

(Ibid: 68)

The latest example of repurposing across related markets is that of the videogame of a film. The game *Enter The Matrix* (2003) was written by the Wachowski brothers who also directed the *Matrix* – Trilogy. The key to the game's economic success was that it contained never-before-seen 35mm film footage, shot specifically for the game, and its overall claim was that it was not just a game based on a movie, but “an integral part of the entire Matrix storyline. If you don't play the game, you're not seeing the entire Matrix story” (Anon 2003).

As we have seen above, the social dimension of remediation pertains to the social status of new media practitioners such as web designers. Bolter and Grusin argue that practitioners of a new medium want to claim the social status of those who worked in earlier media. For example, film stars want to be seen as theatre actors (= artists), actors and directors of television drama want their work to be accorded the status of film and film directors from the 50s onwards wanted to be seen as ‘authors’ of their films. In the case of new media, then, web designers want to be seen as designers, thus foregrounding the creative aspect of their work rather than its technical aspect (i.e. html coding) (Ibid: 69). There is furthermore a social dimension to the viewing of media. Bolter and Grusin argue that the double logic of remediation has a social effect on media viewers. Both ‘immediacy’ and ‘hypermediacy’ have an epistemological and a psychological dimension. Epistemologically, ‘immediacy’ refers to transparency and ‘hypermediacy’ refers to opacity. In a psychological sense, however, both concepts signify authenticity or the real of an experience – in immediacy, because the medium is absent and in hypermediacy, because the medium is excessive and therefore experienced or ‘felt’ as real. This generation of authenticity, which unifies the two aspects of remediation, constitute remediation's social dimension for viewers (Ibid: 70f).

The aesthetics of remediation consist of the combined aesthetics of immediacy and hypermediacy. Immediacy, as we have seen, is aesthetically a transparent representation of the real. The aim of immediacy is an unmediated experience. The aesthetics of hypermediacy, on the other hand, are informed by the multiplicity of mixing different media forms, and foregrounds a patchworked style that is fragmented and heterogeneous. The aim of hypermediacy is to create excess and satiety of experience. Bolter and Grusin argue that the underlying motive behind both hypermedia and transparent media is the “desire to get past the limits of representation and to achieve the real” (Ibid: 53). Crucially, the ‘real’ is not defined in a metaphysical sense (Ibid). Instead, it is configured as the ability to achieve an emotional response in a viewer and thus creating authenticity. While transparent digital media, according to Bolter and Grusin, strive for the real by denying the fact of mediation, hypermedia do so by multiplying mediation in order to create excess and a satiety of experience, both of which create authenticity and thus a reality that is not metaphysical but instead based on intensity of emotions. Alongside the dialectic of immediacy and hypermediacy, the dialectic relationship across different media forms is central to an understanding of the aesthetics of remediation. For example, aesthetic styles of hypermedia, which are central to new media aesthetics, will be used by television such as news programs, while new media borrows styles from other media such as newspapers. This is illustrated by online versions of newspapers, which often remediate their offline version in its layout. Furthermore, the aesthetics of the glance as opposed to the gaze are central to the aesthetics of remediation and closely related to its hypermediated component. While traditional media such as cinema and television tend to be experienced by viewers through a unified gaze, hypermedia forms are experienced through a succession of quick glances, necessitated by the excess of simultaneous mediations. That is, a user’s attention is brief but intense as she navigates the discontinuities of a desktop interface and its different mediations. Bolter and Grusin argue that the activity of glancing furthermore encourages an awareness of a medium’s production process and thus its mediation, rather than just its content:

The aesthetic of the glance also makes the viewer aware of the process rather than just the product-both the process of creation and the process of viewing.

(Ibid: 54)

The aesthetics of remediation are central to the medium of film. Bolter and Grusin show how the aesthetics of film contain both transparent and hypermediated elements. The traditional feature film, in this account, is transparent (i.e. Hollywood film of the 50s), while digital technologies have increasingly encouraged hypermediated styles and elements (for example, in films such as *Natural Born Killers* (1994)). In traditional Hollywood films with their transparent aesthetics, on the other hand, hypermediated elements were commonly associated with dreams, mental disorder, or imbalance:

When characters are in mental balance, the camera is a transparent lens on the world; when something is wrong (when they are drunk or physically or mentally ill), the subjective camera offers a distorted view that makes us aware of the film as medium and often incorporates or refers to other media.

(Ibid: 152)

While hypermediacy thus was traditionally used to represent abnormal ('unreal') states of mind, with the advent of digital techniques, they have become more widespread and thus have turned into a part of legitimate film style, without connoting insanity:

Hypermediacy is certainly no longer the stylistic equivalent of insanity. With the introduction of digital techniques, the Hollywood style has expanded its representational palette from old-fashioned and still popular transparency to at least a moderate degree of hypermediacy and self-acknowledgement.

(Ibid: 154)

Bolter and Grusin point out the affiliation of a more spectacular, hypermediated film to the early cinema before the advent of the traditional Hollywood film. Tom Gunning argues in his analysis of the 'cinema of attractions' (1986) that very early film played on the discontinuity between hypermediacy and transparency. On the one hand, these early films showed 'real' events of a 'documentary' type, such as the arrival of a train or the electrocution of an elephant. On the other hand, the medium

was simultaneously foregrounded as a new medium, and the audience were very conscious and aware that this medium was a spectacle to marvel at - something that showed them a realistic moving image. This, according to Bolter and Grusin, aligns the early cinema of attractions more closely to “late-nineteenth-century taste for magic theatres and forms of trompe l’oeil” rather than film (Ibid: 155). The audience here was oscillating between looking at the content of a film (transparency) and looking ‘through’ the content and at its medium (hypermediacy). For Bolter and Grusin, contemporary Hollywood film has become more spectacular and the great increase of hypermedia elements affiliate it more with the cinema of attractions and early film, rather than traditional, transparent Hollywood film. That is, the amazement or wonder at special effects (for example, making dinosaurs look real in *Jurassic Park* (1993), or the spectacular transformations of the terminator in *Terminator2* (1991)) requires an awareness of the medium, since viewers know that what they see could not ‘really’ happen. Thus, the double logic of remediation is at the heart of many contemporary films – viewers both acknowledge transparent narrative while ‘seeing through’ to the medium via hypermediated special effects. Since the 1990s, hypermediacy as stylistic device has become increasingly popular. Recent films such as *Charlie’s Angels: Full Throttle* (2003) and *Kill Bill: Volume 1* (2003), firmly focus on spectacular action and special effects, rather than plot or character development, while *21 Grams* (2003) and *Eternal Sunshine of the Spotless Mind* (2004), narrate their story in a fragmented way with jumpy and shuffled editing, independent of narrated time. This telling of a story in a fragmented manner similarly increases viewers’ awareness of the medium.

According to Bolter and Grusin, television is the medium that has always borrowed and remediated other media, in particular, film. Traditionally, however, there have been a number of key differences to distinguish TV from film. While film is normally shown in a public space (cinema), TV broadcasts within the private space of the home. Spectators of a film sit in a dark, silent auditorium with strangers, while TV spectatorship is a social activity that takes place in a lit social space with other family and often includes conversation. While traditionally, film has created another world thus structuring an escape route, TV has structured day-to-day activity and

family life. These aspects have served to differentiate between film and TV; however, it is important to note that these strict boundaries have become more and more blurred. An increasing number of public places such as pubs and bars or even clubs show music videos or sports events on big screen TVs, which has brought the formerly private activity of watching television into a public space. On the other hand, the advent of widescreen and large-screen TVs alongside audio Dolby surround system in general and the related increasingly cinematic viewing experience³⁵ has brought film into the private sphere – as have technologies such as VCR and Digital TV, including TV channels dedicated specifically to broadcast film (for example Film Four). Despite this blurring of boundaries between film and TV, Bolter and Grusin argue “as a cultural idea, the film has still managed to remain distinct from television” (186). With regard to televisual styles of remediation, Bolter and Grusin contend that TV is the medium that has been and continues to remediate more than any other medium, so much so that its style is a mixture of both immediacy and hypermediacy, borrowing relentlessly from other media, especially film and new media:

Transparency is the style favored by dramas, soap operas, daytime talk shows, and certain “real-life” programs, while hypermediacy is the style of most news and sports programming, situation comedies, special events such as beauty pageants, and commercials.

(Ibid: 187)

A hypermediated, multimedia style borrowed from the look of the World Wide Web is most apparent in television news: CNN news and other regular news programmes as well as BBC News24 increasingly use multimedia styles such as multiple windows and scrolling text across the bottom (‘Newsflash’). Furthermore, news reporters are often framed in smaller windows, and live pictures of the war in Iraq, for example, are digitised in videophone conversations, resembling the jarred, pixelated view through a web camera. With the advent of digital television, TV has

³⁵ A system of special receiver, speakers, and a DVD player are tellingly called ‘Home Cinema systems’.

approached this hypermediated look even further. The navigation of digital TV closely resembles the navigational structures of a computer interface.

Similar to TV, the World Wide Web (WWW) too is defined by a high degree of remediation. According to Bolter and Grusin, the WWW started by remediating a number of earlier media such as magazine, newspaper, and graphic design. In recent years with advances in technology, the WWW has entered a new phase of remediation by refashioning more processor- and bandwidth-intensive media such as multimedia, radio, film, and television. Overall, bandwidth and computer hardware specifications are limiting or favouring which media the WWW remediates. An example of a recent remediation on the web is Internet Radio. Bolter and Grusin point out the difference of Internet radio to traditional radio that lies in greater interactivity. A listener

has greater control over her listening or viewing experience of radio. It is an immediacy that she achieves through the hypermediacy of the windowed interface. She now listens to Internet radio with a mouse in one hand while she looks at a web page; she reads rubrics as she listens and may change the order of the materials by clicking on the links provided.

(Ibid: 203)

Another recent example of remediation on the World Wide Web is the increasingly popular web camera. Web cams, according to Bolter and Grusin, remediate Television and VCR, as well as CCTV. They furthermore oscillate between transparency and hypermediacy since they bring the 'real' (transparent, immediate, 'live') into cyberspace, thus emphasising the fact that the 'live' slice of the outside world is in fact mediated (inside a frame, only refreshed in intervals, 'dependent' on bandwidth, multiple windows, embedded in a multimedia/hypermedia environment such as a website, etc.).

Overall, Bolter and Grusin argue that with regard to style, TV and the WWW are most similar due to their dominant use of a hypermedia aesthetic strategy. Since both deploy high degrees of remediation, they can never be fully transparent. However, while television still aims to distinguish between physical reality and its mediated

presentation (for example in documentaries, 'Reality TV', etc.), the web remediates more aggressively and insists on the reality of mediation itself, since all exterior 'reality' as well as all other media are refashioned on the web. Overall, Bolter and Grusin conclude that the World Wide Web with its aggressive and multiple mediations emphasises more than any previous medium that there is no 'outside' of mediation, which makes mediation itself real.

2.4.4. Summary: Theories of New Media

In the previous two sections, two very different approaches to a theory of new media and a possible field of new media studies were closely examined. The approach by Manovich (2001) attempted to define new media as a new cultural form with new specific qualities and characteristics that was clearly demarcated from previous cultural forms, despite being heavily influenced in particular by cinema. Bolter and Grusin (1999), on the other hand, considered new media as the latest manifestation of a cultural style consisting of an increasing tendency of all media to borrow and refashion one another. For Bolter and Grusin, 'new media' did not exist as a separate and new cultural form. Instead, they differentiated between 'technology' and 'medium' to signify that, while 'technology' refers to the idea of a separate device (and could thus be new, referring for example to computers), this device immediately turned into a medium upon entering the sociotechnical networks that it constitutes. Thus, Bolter and Grusin foregrounded the stylistic process of remediation that, according to their analysis, lies at the heart of all media but has increasingly intensified with the advent of new media technologies. Since this intensified remediation applied mostly to TV technology and new media technologies, it was impossible to consider new media technologies separately from previous media. Instead, new media was characterised by a style containing a high degree of remediation and especially, hypermedia elements (such as multimedia and fragmentation). The increased emphasis on spectacle was found in TV, film, and even books, and its favoured viewing mode was that of the glance, which was most prominent in TV technologies and new media technologies. An interesting point was raised concerning the motive behind media. Bolter and Grusin, similar to Bazin (1967) argued that this motive was to get past the limits of representation and to

achieve the real. However, the definition of real has changed. Where Manovich still equated the real with a cinematic realist style, i.e., the exact representation of an ‘exterior’ reality, Bolter and Grusin moved away from such a metaphysical interpretation to a model of reality that foregrounded feelings of authenticity. This authenticity could not only be reached through transparency (i.e. a transparent representation), but also through hypermediacy that was characterised by feelings of satiety and excess, i.e. an aesthetics of density. Both Manovich and Bolter and Grusin singled out space as increasingly important in a theory of new media. Space was the main field on which new media style took place, both in the dense spatial spectacle of a film such as *Kill Bill: Volume 1* (2003) and the windowed interface, but also in the significance of navigation and thus negotiating space, rather than time (for example navigation of digital TV).

Overall, Bolter and Grusin convincingly argued that new media was primarily an aesthetic concept, while new media technologies were technologies characterised by a high degree of new media aesthetics, i.e. remediation. New media technologies include new media cinema and new media (especially digital) TV. These media not only remediate various styles, but also various technologies (for example, *Nokia N-Gage* is a mobile phone that remediates a game console). While it is therefore impossible to define new media as a *new* medium, Bolter and Grusin argued that what was new about new media was the way in which it remediated older media. Both Manovich’s and Bolter and Grusin’s theories of new media provide a theoretical background throughout this thesis.

2.5. Power Structures in New Media

2.5.1. Introduction

The first wave of Internet research, from the mid- to late 1990s, was characterised largely by a Utopian discourse of equality and immateriality. Referred to as ‘theology of cyberspace’ (Bolter and Grusin 1999), this discourse consisted of an assumption of flat hierarchies and increased political equality due to ease of public

participation and engagement. At the centre of it was the idea of cyberspace as an immaterial, separate and parallel world that was not constrained by physical and social barriers such as categories of race, sex, class, and gender. The ideas of flat hierarchies and the absence of power structures were ideologically reinforced by the conception of the Internet as a 'network of networks', consisting of equal computers without any central, superordinated computer and the initial absence of a governing body regulating the Internet's content.³⁶ Graham (2004) argues that the configuration of cyberspace as an immaterial world was heavily influenced by the invisibility of new media's material and thus economic base, such as underground cables and modems that plugged straight into the telephone line, as well as 'always on' networks common in Universities and other public domains (for example Internet cafes).³⁷ This conception of the Internet as a free-for-all, equal medium was furthermore compounded by the low entry costs initially associated with new media production, signified by the great increase of Internet start-ups and heavy investments by existing firms into online businesses before the dotcom crash in 2000. From the late 1990s onwards, Internet research became more critical and started focussing on power structures within new media. While initially the concern was access to computers and the Internet, resulting in quantitative studies surrounding this 'Digital Divide', the focus has more recently shifted towards the *quality* of computer and Internet use, that is, the ways in which computers are used and the distribution of power across differentiated use. This is because, at least in Western societies, access to computers and the Internet has become so widespread that quantitative studies of the 'Digital Divide' are no longer able to account for continuing hierarchies within new media (Couldry 2004). Other strands of research have focussed on one prominent battleground of new and old media in the form of music, software, and increasingly film piracy. The underlying issue here is the increase of informational forms of power where possession of intellectual property such as trademarks and copyright is the main means through which power is negotiated. This is mirrored in studies investigating the effect new media has had on media economics. Here, digitisation and the Internet as new medium of distribution

³⁶ See Lister et al, 2003: 221ff.

³⁷ Graham points out that this invisibility also affects other new media, for example in the case of mobile towers in the UK. While these are not underground, they are nevertheless hidden - mobile towers in the UK are commonly disguised as trees.

have on the one hand democratised the media industry by lowering the production and distribution costs of media content. On the other hand, this has greatly increased competition, resulting in an ever-increasing importance of brands and intellectual property and the enforcement thereof.

2.5.2. The Digital Divide

‘Digital Divide’ was the term first used to try to define underlying hierarchies of those who are online and those who are not. Pippa Norris (2001), in her book with the same title, compared Internet use internationally, drawing mainly on quantitative data. She found that the distribution of Internet use and access replicated that of existing media. That is, the wealthiest nations had the largest Internet user base and existing inequalities concerning other media and communication technologies were simply replicated with respect to new media. Norris examined in more detail Internet use in the US and unsurprisingly found that “younger people, men, the highly educated and highly affluent” were more likely to be online (139). Here as in her cross-national study, the inequalities with regard to Internet use and access were mirrored with respect to other communication technologies. As a result, she concluded that the ‘Digital Divide’ was nothing new and specific to the Internet but instead had occurred and was occurring with other media and technologies (for example telephone, satellite TV, etc.). Norris furthermore focused on the role of the Internet with regard to political engagement, to assess its influence on increased democratisation and equality. She found that the Internet had no revolutionary impact on users’ political participation and that it did not mobilise those people who were not already engaged politically. She did however find that the Internet had the potential for smaller groups and organisations to gain a voice (140). Katz and Rice (2002) mirrored Norris’ conclusion that the Internet did not, as initially anticipated, ‘revolutionise’ political participation. They found that Internet users did not increasingly seek out political information on the web; additionally, when they did search for such information, they tended to turn to major news media sources and their web presence, thus accessing the same information they would offline (138f). Katz and Rice concluded that Internet use did not have a major impact on users’ sociability and real life communication and interaction, nor did it revolutionise their

political engagement. Instead, use of the Internet integrated with that of other media into everyday social life (Ibid).

Overall, these studies demystified the conception of the Internet as a hierarchy-free and highly democratic tool of equality. It was shown that the Internet replicated existing inequalities and that Internet access mirrored access to existing technologies and media. The first groups to benefit from the new technology were affluent, educated white middle-class males. This demographic has changed considerably with the increase of online penetration. Rainie and Bell (2004) argue that there has been a shift from a predominantly white, male Internet user with a high level of education to a majority of female population alongside an increase in users from a minority or poorer, less educated background:

At the time of the inaugural publication of *new media & society*, the US Internet population was close to 60 percent male and the core user population was made up of young Whites with high levels of formal education, living in households with relatively high levels of income. Now, the online audience is slightly more female than male and the noteworthy increases among demographic groups have occurred among minorities, those living in households with modest levels of income, and whose formal schooling ended with a high school diploma or those who have taken a few years of college courses but have no degree.

(Rainie and Bell 2004: 48)

The authors show how this change in online population has had an influence on online content. For example, the increase in female users has increased traffic to and demand for health websites, while ethnic minority users have increased demand for culture and music sites. Overall, then, penetration rates in Western countries especially have risen greatly over the last few years. This, alongside the decreasing cost of buying an 'Internet ready' computer, means that the Digital Divide in Western countries is no longer in the majority of cases a question of physical, technological or economical access. Since the Digital Divide within the literature primarily denotes the separation into Internet 'haves' and 'have-nots', the concept can no longer be used exclusively and exhaustively to explain differentiated access

and use of the Internet, as determined by (Internet) literacy, social support, and skill.³⁸

2.5.3. Digital Inequality

‘Digital Inequality’, a term coined by DiMaggio and Hargittai (2001), is a concept to address the social inequality of differentiated Internet use, as opposed to just physical access. The authors propose a shift from quantitative to qualitative research of Internet use, focusing on inequalities among existing Internet users rather than the dichotomy between Internet ‘haves’ and ‘have-nots’. Areas of research pertain to anything that may cause inequalities in Internet use and the authors define five different factors in which this inequality may manifest itself. The first factor pertains to the technical means with which people access the web, such as hardware, software, and connection speed. For example, people with hardware that is more advanced and a faster connection (e.g. DSL instead of 56K modem) are more likely and able to access all Internet content, including applications such as streaming video, including newscasts or short films etc. Inequality is thus related to the technical equipment used, since less advanced hardware, software, and connection speed will prescribe less advanced ways in which the Internet can be utilised (9). The second factor relates to the autonomy concerning people’s use of the Internet and to what extent they control their use of it. Internet access in public places (such as a library) might be constrained by time limits, monitoring systems (prevention from accessing certain sites), or other technical impediments.³⁹ Internet access from home,

³⁸ While this quantitative approach is no longer a primary concern within US based and Western research, it is still useful with regard to studying Internet access *between* nations, especially in relation to globalism and the divide between rich and poor nations in general. Following Pippa Norris (2001), Couldry (2004) refers to the quantitative digital divide as the ‘global divide’ (188). While this global divide thus is concerned with quantitative aspects such as telecommunications infrastructures, number of computers, website hosts, etc., the qualitative aspects of the digital divide, in this application of the term, is concerned with the ways in which people who are connected *use* the Internet.

³⁹ The author’s Internet use in libraries both in London and Edinburgh confirms this point. In a Greenwich library in London, it was necessary to book an appointment to use the (free) facilities, and the time at the terminals was limited to 30 minutes per session. The blocking of certain sites is common in public places but also in the workplace, and most users in the workplace will not have any rights to install or download software or to change any settings. The author has experienced herself the frustration at the removal of admin rights for the PC in her office at Queen Margaret University College when trying to install FTP software in order to download documents related to her research from a non-QMUC server. The installation was impossible because her admin rights had been removed and her user status thus had been downgraded, accompanied by the loss of certain (technological) rights.

on the other hand, might be constrained by the number of other family members wanting to access the net, parental protection via software such as *Net Nanny*, or the policies of an ISP (9f). The third factor regarding inequality of Internet use relates to an individual's Internet competence and his or her practical skills in using it. DiMaggio and Hargittai point out different kinds of knowledge that make up Internet skill and thus constitute what they call Internet competence. This includes knowledge how to search and download information as well as knowledge about software and hardware necessary for troubleshooting problems, for example, keeping up-to-date (especially regarding Internet security, such as downloading Microsoft *Windows* updates, AntiVirus and Anti-Adware software etc.).⁴⁰ It would seem that 'troubleshooting knowledge' is a key aspect of digital inequality, as users without this knowledge are economically vulnerable in a number of ways. A well-known example is the existence of so-called rogue diallers, whereby an accidentally downloaded parasite changes the number a modem dials to connect to the Internet to one with a premium rate.⁴¹ A more obvious point is that users without troubleshooting knowledge have to rely on experts to fix their computers, often for a high rate, and are likely to be more vulnerable to purchase additional software that they are promised will fix their problems. There is also a legal risk involved for users with less advanced or no technological and troubleshooting knowledge. Certain viruses set up a computer for remote access with the result that it can be controlled from another computer, without the individual noticing. Someone with criminal intent can hijack strangers' computers to carry out illegal activities, such as credit card fraud, accessing illegal sites, or providing advertising to porn sites, including illegal porn. Those activities are traced back to the unsuspecting individual's computer and it is difficult to prove that this individual was not responsible for the activities, as proof is on their computer.⁴² The fourth key factor in Internet (in)equality, according to DiMaggio and Hargittai, is access to social support. This

⁴⁰ The author's part-time job consists of moderating Internet message boards. Internet security issues are a frequent topic of conversation on boards where the demographics of the user group are largely middle-aged. There is a high degree of helplessness and users frequently describe how their computer to access the Internet gets less and less functional as viruses and adware take over. Users often post messages asking for help since the knowledge required to troubleshoot a computer gets more and more complex as viruses and adware become more and more sophisticated.

⁴¹ For more information on rogue dialling, see bbc.co.uk (2004).

⁴² For an example involving the hijacking a computer, see Campbell (2003).

social support can take the form of assistance from library staff, teachers, and office staff in the workplace. The authors propose that this kind of social support and help will increase a new user's motivation to engage with new technologies, thus increasing their learning curve and developing their digital competence. The fifth and final aspect influencing digital inequality pertains to the purposes for which one uses the Internet. DiMaggio and Hargittai argue that educational use of the Internet will increase human and cultural capital more so than use based purely on consumption (13). This point is highly problematic, since there is no clear demarcation between 'educational' and 'consumption-based' use. Instead, consumption activities on the Internet are often highly educational. For example, shopping online helps increase navigational and information retrieval skills (finding goods via a search engine, navigating a shopping page up to the shopping cart and purchase), while participation and consumption in online communities often includes production of content and contribution to a community's development, which in itself is educational (increase in knowledge about online communities). It is difficult to envisage what the authors mean by "pure consumption activities" (13) on the Internet.

Overall, however, the focus on technical apparatus, autonomy of use, skill and social support provides a useful framework for studying inequalities among existing Internet users. DiMaggio and Hargittai point out that inequalities in individual-level Internet use and access are always embedded within an institutional and political context and that digital inequality is therefore negotiated on a societal scale. For example, corporations and public institutions may have highly accessible and usable websites, or their websites might be difficult to navigate and require all the latest plug-ins and a high-speed Internet connection. Another important issue influencing Internet use are government regulations and legal issues such as intellectual property law, the most prominent example of which is copyright surrounding downloaded music, software, and increasingly, films. The authors argue that policies of government, public institutions, and corporations shape patterns of Internet access and use and conclude that this institutional level has to be taken into account when studying individual-level Internet use, access, and inequalities (15ff).

While DiMaggio and Hargittai's work focuses largely on digital inequality among Western Internet users, definitions of power structures and inequalities in access and

use of the Internet take on a different dimension when applied to lesser-developed countries. Mark Warschauer, in his book *Technology and Social Inclusion* (2003), considers Internet use and access in lesser-developed countries such as Brazil, China, Egypt and India. He points out that, while technological concerns such as physical infrastructure (such as wiring) and therefore the traditional 'Digital Divide' are much more central to Internet access in less developed countries, (Internet) literacy and education is at least as important a requirement for successful Internet use. Since much of the Internet is text-based, physical access to it does not automatically result in Internet use for everyone in countries where the literacy rate is only 50%. In effect, it could be argued that existing inequalities due to literacy are exacerbated since the Internet only spreads to some portions of the population. As a result, Warschauer argues that 'Internet use' in many developing countries does not only refer to individuals using it directly (since they have to be literate in order to do so) but extends to other forms of more indirect access for a larger number of illiterate users. For example, information about the weather can be disseminated to agricultural workers, or health-care options to inhabitants of rural villages. This information can be researched on the Internet and subsequently can be made available via traditional media, thus reaching more people:

Programs exist whereby staff members collect questions from community members, research them online and then broadcast responses via more traditional media to reach wider audiences.

(Warschauer 2003: 140f)

Thus, aspects of digital inequality affect not only the five areas outlined by DiMaggio and Hargittai - equipment, autonomy, skill, support, and scope of use - but may also include aspects such as basic education and literacy when discussing and defining the conditions of Internet access and use. Warschauer's research also helps expanding the definition of Internet use not only for less developed but also developed Western countries. Some portions of the population in Western countries will use the Internet 'indirectly', similar to illiterate people in less developed countries, for example, asking their children or friends to retrieve information such

as train times or ordering flight tickets.⁴³ Thus, Warschauer's approach is helpful for a better understanding of the use of new media over and above the matter of physical and technological access, not only across different countries, but also across social boundaries within countries themselves.

Overall, power structures with regard to Internet access and use exist not only in quantitative, physical access. Both DiMaggio and Hargittai and Warschauer illustrate convincingly how use of the Internet itself is a site of power struggles with varying degrees of inequalities. DiMaggio and Hargittai suggest five areas of digital inequalities in Western societies and point to the necessity of further research into differentiated use and how this constitutes, perpetuates, and challenges digital power structures. Warschauer's research on Internet use in less developed countries illustrates the shortcomings of a definition of 'Internet use' that focuses on an individual person actively operating a computer, thus provides valuable insight into similar indirect uses in highly developed countries. Both accounts show that the so-called digital inequality is not a social inequality new or specific to new media. Instead, social inequality of Internet use is no different to inequalities relating to the use of other media or indeed any complex technical or mechanical device.

2.5.4. Informational Power

'Informational power' refers to forms of power exercised through intellect as opposed to traditional forms of power that are connected to material property. The main form of informational power consists of intellectual property (such as trademarks, copyright) and it works not through exploitation but through exclusion from the flows of information and communication. Lash (2002) argues that power in what he calls the 'information age' becomes a question not of material but of intellectual property – of trademark, patent, and copyright:

If real property power in the means of production brought workers inside to be dominated by capital in relations of production, then

⁴³ For example, 2 years ago the author's mother visited her in Edinburgh, from Germany. The author booked the flight tickets online, and had them sent out to her mother's postal address in Germany. It could be argued, therefore, that the mother in this (and other) instances does use the Internet, albeit passively or indirectly. Nevertheless, her Internet and computer illiteracy prevents her from using computers directly.

intellectual property uses its power to exclude, through the standard in operating system software, in, for example, digital satellite television.

(Lash 2002: 75)

Examples include the new Satellite dish technology in Italy (particularly by Sky), whereby Arab TV channels are excluded from the list of channels. This is achieved by making them difficult to find and it is furthermore impossible to pre-program Al Jazeera for example into a remote control for easy access according to P. Gentile (personal communication, January 13, 2006). By relegating Arab channels to marginal digital locations, which are difficult to retrieve and cannot be stored as technical standard, the power of exclusion based on availability of information is exercised.

The power of exclusion, therefore, not only pertains to intellectual property, but it also extends to a general exclusion from what Lash calls the global elite. Those without power are excluded from the loops of the networks, which constitute this global information and communication elite and have no access to the sociotechnical global networks. Instead, the social class without informational power becomes increasingly marginal to global informational capitalism:

in the core the previously exploited, semi-skilled and ethnic minority working classes become increasingly irrelevant to informational-accumulation, which now takes place not on their backs but behind their backs. A self-excluding overclass leads to a forcibly excluded underclass.

(Ibid: 5)

While in Lash's account this underclass is excluded from within, capitalist exploitation is replicated in non-Western countries. He argues that intellectual work (such as design of a new car) is still largely carried out in the core of Western society, while the work of production is contracted out to poor non-Western countries such as Indonesia or Thailand. Thus, while in Western societies, power is increasingly becoming informational and negotiated via intellectual property laws, old forms of manufacturing power are replicated in global capitalism's periphery. Lash furthermore poses the question how political struggles are possible in an

information age where power has become much more elusive and discontinuous. He argues that any subversion of power cannot stand outside the global informational networks but instead has to become part of it and itself add on to the networks and turn into its subversive supplement. Political struggle thus lies

in the power of the supplement to reconstitute the boundaries and reconfigure the objects. The critique of information lies in the supplement that can make its modest contribution to reconfiguring such material, human, biological and social forms of life.

(Ibid: 201)

When power is related to possession of intellectual property, its subversion takes place at the same site. There are many examples of subversive appropriation of intellectual property. Warez groups continue to provide cracked releases of the most popular software, often including an info sheet on a group's members or writing messages mocking the software company or a greeting into the software's code, which displays on its installation.⁴⁴ There are also sites listing registration and activation codes of software that turn a trial version of a piece of software into its full version.⁴⁵ Universities teaching subjects that require expensive software (such as digital design, filmmaking and animation, etc.) often turn a blind eye on their students sharing software or even using pirated copies to enable them to do their course work from home.⁴⁶ The best-known example of undermining intellectual

⁴⁴ For example the warez group 'Radium' was a prolific group releasing cracked versions of mainly audio software in the late 1990s. They disbanded in 2001. Their manifesto, which was typically published in the text files accompanying their releases, states: "Radium believes that students and young people should have hands-on access to computer tools so they can find out which career is right for them. It's well known that most students (and even older people) change their career direction multiple times as they try out different things. These utilities are too expensive for a student to buy only to find out they are much better at 3d graphics or programming than audio engineering. Or that the program doesn't [sic] work the way they imagined it. And unfortunately, you don't become employable by learning to use the budget \$80 tools that a student could afford. Radium promotes practical self education -- If you use this software for more than learning then buy it!" An overview of warez groups is provided at Wikipedia (n.d.a).

⁴⁵ Many sites listing resources and guides to illegally obtaining software and other media have to change the server frequently to escape prosecution.

⁴⁶ For example, the author's MA course at a London University required the use of software such as *3D Studio Max*, *Photoshop*, *Premiere*, and *After Effects*, with a total retail value of approx. £4000. A lecturer left pirate copies in a pile on the side of the workshop and suggested that we should help ourselves, thus condoning illegal activity. This seems to be common practice in courses that require software which students are simply unable to afford, given that they also have to purchase a high-spec computer as well as possibly equipment such as digital cameras and other peripherals, in order to be able to complete coursework from home rather than relying solely on the PC studios the University provides.

property rights is the discussion surrounding file-sharing networks and their use to download copyright-protected music, software, and increasingly, films. This is increasingly more regulated with success stories of legal download sites such as Apple's iTunes store. On the other hand, the *BitTorrent* technology⁴⁷ first invented in 2001 has made downloading even large files much faster and easier, thus giving new fuel to the large community of illegal downloaders and facilitating the piracy of entire movies. It is worth pointing out that the retrieval and installation of illegal or cracked software frequently requires competence beyond that of regular computer use and thus is a factor that, according to DiMaggio and Hargittai's conception of digital inequality, itself perpetuates a different type of power structure.⁴⁸ The question remains whether or not any political motivation lies behind attempts to counter informational power. While there is some critical discourse on intellectual property, particular in the OpenSource movement, in most cases it seems to be at least for regular illegal downloaders an economical consideration rather than any conscious movement against and subversion of informational power. Still, the result is that exclusion from intellectual property is reversed to inclusion by means of hacking, illegal downloads, and piracy, and as a result, more people are able to participate in what Lash calls 'global informational capitalism'.⁴⁹

Overall, the concept of informational power is central to an understanding of power structures in new media. Since new media are more 'dematerialised' than their analogue equivalent and often exist not as material products but consist of numerical values (Lister *et al.* 2003), intellectual property has replaced material property as main centre of contention and negotiations of power. It remains to be seen how the new informational power will be negotiated and exercised and how these more elusive forms of power will assert themselves, as illustrated by the ongoing long battle of the music industry and now the film industry's fight against piracy.

⁴⁷ For detailed information on the technical background to *BitTorrent* and other filesharing software, see Cohen (2003) and Pouwelse *et al.* (2004).

⁴⁸ Though it is doubtful that the majority of people would want to be 'equal' and have equal participation in illegal activity.

⁴⁹ For further reading on 'ethical hacking' and hacking as subversion, see Levy (2001 [1984]) and Wark (2004). The issue of hacking is complex and beyond the scope of this thesis.

2.5.5. New Media Economics

The 'theology of cyberspace' (Bolter and Grusin 1999) not only contributed to a cultural discourse of the Internet as a hierarchy-free medium. On the level of economics, it also promised a more equal participation in the media industry as a whole and a challenging of its traditional oligopoly where a few major firms (such as Murdoch's News Corp., Sony, TimeWarner etc.) dominate many sectors of the industry. This discourse of equality was a result of two key aspects of new media affecting media economics: firstly, the influence of digitisation (digital content and digital technologies) and secondly, the arrival of the Internet as a new medium of distribution for media content. As discussed in 2.1., 'digitisation' refers primarily to the fact that media content in new media consists of binary code (zeroes and ones) and is thus far easier and cheaper to store, manipulate, and repackage for different media outputs than analogue media content. On another level, digitisation also refers to the fact that digital media equipment, in particular video and still cameras as well as computers, has become much more widespread and is considerably cheaper than traditional, analogue equipment. These two aspects of digitisation have lowered the production cost of media content, thus lowering one of the entry barriers to the media industry. Doyle (2002) gives as example the success of low-budget films such as *The Blair Witch Project* (1999) and various films of the Dogme95 group, both of which relied not only on cheap new technologies but also, particularly the former, on the Internet as medium of promotion. As discussed in the 2.5.4., digitisation has furthermore affected media economics on the level of content production, publishing, and consumption. Since in new media it is far easier to copy, reassemble, and repackage existing information across different media formats (such as text, audio, video), it is much more difficult to retain and enforce intellectual ownership over media products such as films and music, which is posing a serious threat to the music industry and increasingly, the film industry. This is compounded by the arrival of the Internet as medium of distribution, which constitutes the second key change in media economics through new media. Doyle (2002) argues that on one level, the Internet has challenged traditional distribution methods of the media industry since goods in digitised form can be distributed over the Internet at relatively little marginal cost. Digitisation (and related technology such as compression, and bandwidth

developments) has opened up media content for a new distribution platform, i.e. the Internet. Unlike in traditional distribution, where distributors of old media goods such as books and CDs face significant marginal supply and delivery costs, the same goods in digitised form can be distributed over the Internet at relatively little marginal cost. Overall, distribution outlets for traditional media have increased greatly because of digitisation:

Digital compression techniques have multiplied the potential number of broadcast channels and the Internet provides a virtually unlimited forum for publishing, broadcast and narrowcast transmissions, multimedia and interactive services of all kinds.

(Ibid: 143)

Examples include news broadcast online (for example on the BBC website), digital radio, short clips and webfilms, and the less successful 'Internet TV'. Overall, it seems that the advent of new media by means of digitisation and a new distribution platform has the potential to challenge and shake-up the existing oligopoly of the media industry. However, Doyle (2002) argues that, while a number of entry barriers such as high equipment, production, and distribution costs have indeed been lowered, other barriers are being reinforced or even raised higher. Given that the advent of new media has resulted in an expansion of markets, an increase of distribution platforms for new and existing media content, and generally a greater availability of choice for consumers, new entries into the market face more competition despite lower production costs. Doyle points out that the digital environment favours strong and recognisable brands, particularly, since multi-product media production of existing media firms makes it far easier for established content providers to take advantage of the additional distribution platform for their new and repackaged media content.⁵⁰ Thus, while newcomers to the digital media market might have access to the technical facilities to produce high-quality content that can compete in the media market, the entry barrier now lies in an increasingly competitive market where consumers tend to prefer existing brands. These brands have the additional advantage

⁵⁰ This was mirrored by Katz and Rice's (2002) research. They found that Internet users favour established brands and their Internet presence, rather than seeking out new market entries. Another advantage of old media firms over new ones is their access to a vast catalogue of analogue media content that they can digitise and reuse in the new media environment.

that they can use their existing media channels to promote their online presence. For new brands, the initial building of an online presence and promotion of their brand to create consumer awareness continues to be costly, as it often goes through channels of traditional media:

Without recognizable brands and worthwhile levels of consumer awareness, potential newcomers to the online universe may well find that the high initial costs involved in establishing an online presence (typically involving extensive campaigns on conventional media) represent an effective deterrent to market entry.

(Ibid: 145)

Overall, then, new media and its double aspects of digitisation and a new distribution platform does not democratise media economics to the extent initially anticipated. While digitisation and particularly the resulting lowered production costs mean that more media content producers can enter the industry and promote their products using the new distribution medium of Internet, this has simultaneously greatly increased competition, thus raising the entry barrier with respect to brand promotion and recognition. The advantage of established brands thus shifts from exclusive possession of the tools of production to the possession of a recognisable brand, intellectual property,⁵¹ and access to traditional media channels where their online presence can be promoted and integrated within more traditional media. Consequently, the main media players continue to assert their position in the online market relatively unchallenged and as a whole, bar the ongoing battle surrounding copyright, the existing oligopoly of the media industry has carried over to new media relatively unscathed.

2.5.6. Summary: New Media and Power

In the previous sections, a number of different aspects of power within new media have been analysed. The starting point of discussion was the ‘theology of cyberspace’ which was an early Utopian discourse surrounding new media and in particular, the Internet. This discourse was characterised by an air of revolution and a

⁵¹ For example, access to a back catalogue of analogue media such as audio and video that can easily be digitised and used online.

flattening of hierarchies, promising a more equal society through an increased possibility of political participation and a diminishing of categories of race, class and gender in a 'disembodied' cyberworld. In the area of economics, more equality was seemingly promised through the lowering of entry costs to new media production and distribution, resulting in the dotcom boom of the late 1990s. The first major work of criticism of this 'discourse of equality' analysed physical access to computers and the Internet. It was found that, unlike the promised equality, existing inequalities were replicated in a 'Digital Divide' (Norris 2001) where mainly white, affluent, educated middle-class people benefited from the new technologies. These physical inequalities were largely levelled out in affluent Western countries through a lowering of costs of computers, government policies,⁵² and the great increase in public availability of computers and the Internet in schools, Universities, and libraries. This greater penetration rate resulted in a readdressing of questions of inequality concerning the quality of use of computers and the Internet. It was found that digital inequality exists with regard to technical apparatus (hardware and software used and Internet connection speed), autonomy of use, and skill and social support in relation to Internet use. Social inequality continues to be an important factor shaping and perpetuating hierarchies in new media, while computer and Internet skills and troubleshooting knowledge are the most prominent markers of a higher position within this digital hierarchy. A different form of power in new media exists on an economic level. Here, new media is characterised by a rise in importance of what Lash (2002) calls informational power that has, Lash claims, surpassed manufacturing power as the main form of power within affluent Western societies. Informational power is located in possession of intellectual as opposed to material property and its battlegrounds are copyright and patent regulations. The latest example of the importance of informational power is illustrated by a legal dispute surrounding Internet search engine giant Google's webmail application *Gmail*. Following a trademark dispute with a UK company, Google had to drop its *Gmail* name in October 2005, after already losing the right to use the *Gmail* name in a separate dispute in Germany in May 2005. The trademark battles are partly Google's own fault – they did not protect their trademark before publicising it:

⁵² In the USA, the narrowing of the Digital Divide was a central issue during the Clinton-Gore administration. See for example The White House (2000).

After Google announced its Gmail plans in spring 2004, IIR rushed to register the Gmail trademark with Ohim, the European Union's trademark office, and the US Patent and Trademark Office. (Weber 2005: 3rd section of article)

The result is that Google can no longer “promote one of its most high-profile brands in two of Europe's largest economies” (Ibid: bottom of page). New users signing up to what was formerly *Gmail* now both in the UK and Germany receive an email address ending with the less catchy ‘googlemail.com’, which disrupts any unified brand promotion across Europe and may result in considerable economical damage.⁵³ This latest example illustrates that intellectual property is central to forms of power in new media. This issue is compounded by digitisation and the new distribution medium in the shape of the Internet, which are the main influencing factors on new media economics. We have seen that the media industry’s traditional oligopoly has been challenged, in particular in the area of copyright-protected media such as films and music which, due to digitisation and the Internet, can be illegally copied and distributed much more easily. The challenge to existing power structures, then, has not occurred as initially anticipated in an opening of the market to many new entries through greatly lowered production costs. Instead, the great increase in competition has resulted in a reaffirmation of old players in the media industry via mergers such as TimeWarner and AOL, and increase of brand importance where the old firms have an advantage due to existing communication channels and back catalogues that strengthen brand recognition. The entry barrier has thus shifted from the cost of production materials to the possession of a recognisable brand. The challenge to existing power structures within media economics has occurred elsewhere – in the area of intellectual property, via the battleground of music and film copyright. This ongoing battle supports Lash’s claim of an increase of informational power structures as a characteristic of new media and it is here where resistance to that power, whether politically motivated or not, continues to take place.

⁵³ The author herself has had a gmail account since 2004. She, and many people she has spoken to, consider themselves lucky as the renaming to googlemail does not affect existing users of gmail. The googlemail name is considered far less desirable as it is longer and less catchy.

2.6. The Webfilm: Film and New Media

2.6.1. Introduction

While the concept of webfilm has been around since 1998 (Stables 2000) and the first fully-fledged webfilm entertainment portals started in 1998 (iFilm) and 1999 (AtomFilms) respectively (McMahon 2001a; AtomFilms 1999), an in-depth study of webfilm as a new cultural form does not exist at the time of writing (2003). Karin Wehn (2000-2005) however has started researching the subcategory of short animated webfilm and is publishing her research online. Her project is complex and is reviewed 2.6.3. One reason for the absence of a study of webfilm might be the difficulty to categorise it within current existing strands of media and film research. Not only is webfilm itself a relatively new phenomenon, but so is the field of new media research itself. Thus, existing discussions of webfilm align themselves mostly with traditional film studies and analysis.

One of the earliest publications to notice and analyse webfilm is *The Guardian* website. In a subsection of the online paper's film section called *Cyber Cinema: Short Films on the Web*, Guardian Unlimited has been discussing and analysing webfilms since 2000. Alongside introductory articles such as the one by Stables (2000), the online paper's focus is a monthly review and recommendation section titled 'Essential viewing this month', which started to appear regularly from April 2001 onwards. On an irregular basis, however, the online paper has been publishing reviews and recommendations since September 2000.⁵⁴ Defining webfilm as subcategory of film is also the approach used by Elsey and Kelly (2002). The authors, in their book *In Short: A Guide to Short Film-making in the Digital Age*, discuss the Internet and webfilm briefly in the context of short film distribution and production and the influence the 'digital revolution' might have on short film. They consider webfilm not as a separate form but instead see the Internet as a subordinated tool to showcase short films and as such a mere distribution tool, subordinated to cinema:

⁵⁴ See Dodson *et al.* (2000).

The digital revolution could create – some would argue is creating – a revolution in short film production, marketing, distribution and exhibition. ...In terms of short films, the Internet will play a role in marketing and distribution, perhaps a pre-eminent role eventually, but it will always be the junior partner of cinema, as the creativity starts with the film not the Web.

(Elsey and Kelly 2002: 134ff)

That is, Elsey and Kelly locate creativity in filmmaking and in their account, the web is a mere tool. The art of filmmaking is unrelated to new media and takes place exclusively in the realm of film. Both *The Guardian's* extensive online 'cybercinema' section and Elsey's and Kelly's book consider film on the web a subcategory of film and thus regard the Internet mostly as a new tool of distribution.

2.6.2. The Webfilm: A Revolution in Filmmaking?

In contrast to the approaches to webfilm discussed above, for Ana Kronschnabl (1999-2005) webfilm represents a genuinely new art form. Kronschnabl has a background mainly in independent film-production. Together with Tomas Rawlings and Armin Elsaesser she has, in the form of *plugincinema* (<http://www.plugincinema.com>) created an online platform to discuss "the possibility of a new form - films created, distributed and exhibited exclusively on the Internet" (Ibid: 'About us' menu). The site's purpose is to provide resources and exhibition space with the aim of "aiding traditional film-makers to make the leap from analogue to digital" (Ibid). With this aim in mind, Kronschnabl, who is currently doing a PhD in 'Filmmaking for the Internet', and Tomas Rawlings, one of the contributors on the *plugincinema* site, have published a book containing many of the online resources and additional information for aspiring Internet filmmakers. In reference to the website, the book is called *PlugInTurnOn: A Guide to Internet Filmmaking* (2004) and it is a mostly practical manual for people wanting to make and show films on the Internet. The foreword by Lev Manovich places the book within a discourse of new media that considers new media a distinct new form with a unique new language, separate from older media (see Manovich 2000; 2001). Kronschnabl and Rawlings, in the spirit of this approach, argue that the environment of webfilm production and distribution is completely new. Consequently, the authors "consider web films to be, potentially, a unique new form of media" (Kronschnabl and Rawlings 2004: 20).

The overall purpose of the book centres on this premise of webfilm as new form of media and the “unique promise that web filmmaking offers its enthusiast” (Ibid: 17). It thus functions as a predominantly technical instruction guide for traditional filmmakers to turn into webfilmmakers who are thus enabled to make, edit and distribute their own work. For Kronschnabl and Rawlings, then, webfilm is not a ‘film on the Internet’ but a distinctly new form of media with new aesthetics. Indeed, they even deem webfilmmaking a new revolutionary movement:

a genuinely original movement with motivations and pre-occupations that are completely unique, although rooted, as is all multimedia, in the filmmaking annals.

(Ibid: 21f)

The book does not question the separation of different media forms. Instead, once webfilm has been defined as separate to other forms of films that can be found on the Internet (such as trailers and traditional films using the Internet merely as new means of distribution), the book focuses on this new form as separate entity. It then proceeds to discuss some of the issues surrounding legal considerations such as copyright and questions of technological dominance in the form of ownership. The key underlying motivation for the book is Kronschnabl’s and Rawlings’ conviction that filmmakers need to become techno-savvy as part of their education to turn into successful Internet filmmakers. They argue that the complex new Internet-related knowledge required for Internet filmmaking (for example different plug-ins, platforms, issues of copyright, streaming, etc.) is likely to appear alien to traditional filmmakers. One possible solution suggested by the authors is for traditional filmmakers to collaborate with people who have the necessary technical knowledge:

Many of the short films appearing on the Internet have been made by those familiar with the technology, rather than traditional filmmakers. This is no bad thing, however, how much better would those films be if people who had spent their lives learning the craft got together with people who could make the technology work for them?

(Ibid: 84)

This conviction places the art of filmmaking firmly into the hands of those ‘properly educated’ to make films, thus ignoring the fact that those with a firm background in technology rather than filmmaking are at a clear advantage with regard to making Internet films. ‘Geeks’ with an in-depth knowledge and understanding of technological implications are more likely to play and innovate with technological limitations or use those limitations as a subject and will find it easier to produce films with aesthetics that are influenced by technological constraints. The authors’ stance, however, is that filmmaking is the domain of filmmakers, and geeks should ‘lend a hand’ with the new technical challenges (Ibid: 83f). Despite these shortcomings, part one of the book (‘THINKING’) provides a useful introduction to theoretical considerations of Internet filmmaking, in particular, issues of technological forms of power (through copyright and intellectual ownership in general), file formats, as well as a brief introduction to Internet business models. Part 2, DOING, explores the technical context of filmmaking for the Internet and its aim is to introduce filmmakers to the technical aspects involved in producing and distributing films online. In the introduction to part 2, Robert Newman compares Internet filmmaking to the DIY spirit of the first punk rock bands (Ibid: 89) and asserts that this pioneering movement of Internet filmmaking may produce something that is beyond anything that has gone on before: “And more than that...in fact we enter a wholly new grammar. Maybe ‘film’ isn’t even the word” (Ibid).

Part 2 proceeds by laying out a systematic guide to the process of making an Internet film, and discusses a number of key issues that traditional filmmakers will have to learn for their transition to successful online filmmakers. Aspects such as various software and hardware requirements, issues of compression, advice on digital cameras and advice on methods of online distribution (servers, peer-to-peer distribution, html web design etc.) are discussed in depth. The core of the book, and discussed in both part 1 and part 2, is the authors’ ‘pluginmanifesto’, which is intended as a “dogme95 for the Internet” (Ibid: 77f), that is, a framework for Internet filmmakers to adhere to. Part 1 contains the original manifesto and theoretical considerations surrounding it, while part 2 applies the ‘pluginmanifesto’ practically. The ‘pluginmanifesto’ aims to create

a definitive framework that filmmakers can use to produce films specifically for the Internet: to enable them to work with the medium and to see technological limitations as a creative catalyst.
(Ibid: 80)

The manifesto is written in a similar style to dogme95 and it too contains a tone of pioneer spirit. At its core is the idea that the Internet, like TV, film and theatre before, is a new medium and not just a viewing platform. The focus is not to copy forms and styles from TV and film, since this will only disappoint webfilm viewers: the audience will complain about the perceived lack of quality. To counteract this, the pluginmanifesto proposes to ‘search for the appropriate form for films on the Internet’ (Ibid: 83), suggesting to use codecs and compression creatively, and to create structure through non-narrative means. The pluginmanifesto is discussed in more detail in 6.2.2. In part two, the manifesto is taken up again and its ideas are applied to real-life filmmaking. Thus, the focus is especially on technological constraints and the implications those constraints have on filmmaking for the Internet. For example, constraints of server space and bandwidth necessitate a short film, rather than a traditional feature-long film. The emphasis is on using technological limitations as a creative force and working with those constraints, rather than against them (Ibid: 153ff). Kronschnabl and Rawlings argue that by working with the technology, Internet filmmakers can “innovate beyond Hollywood” (Ibid: 153) by means of bottom-up filmmaking and cooperation that is necessary in order to tackle the technological complexities that ‘geeks’ rather than filmmakers will be familiar with. The authors furthermore discuss various shots of live action filming and assess their usefulness for Internet filmmaking (for example, close up shots are preferred to long shots since they are not affected as much by compression which will blur long shots, making the action less transparent). Lastly, the book contains 7 appendices. These appendices function as tutorials to key aspects of filmmaking for the Internet, such as digital capturing, editing, compression, and website creation.

To conclude, *PlugInTurnOn: A Guide to Internet Filmmaking* is intended as a practical guide to help traditional filmmakers make the transition to Internet filmmaking, rather than exploring webfilm or its implications for film and new media

in great depth. Thus, the author's 'pluginmanifesto', which is intended as a 'dogme95 for the digital age', ends with what sums up the intention of the book: "'Seize the day!' and make your work available to millions of people. Be part of shaping the world's next great art form" (Ibid: 85).

Overall, the book is a useful and practical handbook for people wanting to create films for the Internet but falls short of any wider theoretical discussion of new media, webfilms, and the implications of digital media for different media forms.

2.6.3. 'Animation on the Internet'

A more in-depth study of films on the Internet is provided by the research project of Karin Wehn (2000-2005). Wehn, in her postdoctoral research, is studying animated webfilms. Her premise is that the Internet has contributed to a revival of animated films:

Currently, on the world wide web, a renaissance of animation is taking place. Due to user-friendly software such as Flash and easily available players and plug-ins users have access to an abundance of animated films.

(Wehn 2000-2005: 'English Introduction')

The research project currently exists as an online version only, and most of it is written in German. Additionally, Wehn has been running seminars on the subject matter⁵⁵ and the project is thus a mixture of articles by the author and contributions by student participants of the seminars. 'Animation on the Internet' contains an extensive link collection, a number of reviews of artists and portals alongside theoretical questions on the history, aesthetics and types of animation. The main idea behind Wehn's research is that the Internet as distribution platform has enabled a revival of animation and especially animated short films. Thus, the investigation focuses mostly on established categories of production, consumption and distribution, applying those categories of analysis to animated films on the Internet. Similar to Kronschnabl, Wehn differentiates between animation that is shown on the

⁵⁵ "This web-project has grown out of a course on animation on the Internet at the Institute for Communication and Media Studies, University of Leipzig, Germany" (Ibid).

web (“Animation im Netz”) and animation that is made *specifically* for the web (“Netzanimation”):

Animation on the Internet can initially be distinguished in analogy to literature on the net/net literature, where the grounds of differentiation is whether they (1) have been produced initially for another medium and then later have been exhibited on the web (“animation on the net”) or if they (2) have been produced directly for the web (“net animation”). ⁵⁶ (*author’s translation*)

Wehn does not investigate any potential definitional or theoretical difficulties relating to ‘film on the Internet’. One such difficulty is whether animation made specifically for the web can be categorised as film at all; another possible enquiry is whether such ‘net animations’ require different theoretical and methodological frameworks of analysis. Instead, established categories of film analysis are deployed to analyse animation on the Internet. The ‘Making Of’ section discusses production and distribution of animated webfilms. Here, similar to Kronschnabl, the focus is on the premise that ‘everyone can be a filmmaker’ and, while Wehn's research does not contain the same pioneering and revolutionary undertones as found in Kronschnabl's book, the need for technological education of filmmakers is similarly a key issue within the project. For example, at the beginning of the ‘Making Of’ section, Wehn extensively discusses the technical context of webfilm production, consumption and distribution. In the chapter ‘Technische Rahmenbedingungen’ (technological framework), the author discusses compression, plug-ins, and Internet connection speed. Similar to Kronschnabl, Wehn too considers technical limitations such as bandwidth a creative motivation rather than an obstacle, and argues that these limitations furthermore influence the aesthetics of animated webfilms:

The quality of the animation depends on the bandwidth and the hardware of the user. This "lack" challenges the creativity of the animator and frequently results in an extremely limited animation style.

(Ibid)

⁵⁶ Ibid: ‘(Fast nur) Trash, Tierquälerei und Blasphemie: Renaissance des animierten Kurzfilms auf Entertainment-Portalen im WWW’.

When discussing the technological framework of webfilm production, neither Wehn nor Kronschnabl clearly differentiate between production and consumption of webfilms. While Kronschnabl's research foregrounds webfilm production and consumption to the expense of distribution, Wehn discusses the distribution and business model of animated webfilms in depth. She outlines various platforms of webfilm showcases (including entertainment portals, production companies, individual artists, businesses, festivals, museums), while students of her seminar analyse a number of individual platforms, thus supporting her argument. Wehn's research into the business model of webfilms is impressive; this model is, however, not specific to webfilms alone. Instead, many of its aspects are part of new media and Internet economy in general (for example creating revenue through the *Amazon Honor System*, advertising etc.). Apart from the study of production/consumption and distribution, Wehn and her students furthermore discuss the aesthetics of animated webfilms at length. Wehn classifies them roughly into different sections (serials, parodies, dirty toons, interactive) thus providing a useful overview of categories for further research. The research project also contains a number of analyses of various animated webfilm sites (for example bitfilm, nick) and artists (such as joe cartoon) as well as showcasing individual films ('Showroom' section) and categories (including Brickfilms, Parodies, etc.). It also comes with an extensive reference section and a collection of links, thus completing a thorough collection of research on animated short film on the Internet. To sum up, 'Animation on the Internet' is a useful in-depth guide. Wehn herself acknowledges that it is a new academic field of research and thus, the online project is intended as an open-ended collection of research-in-progress containing not only Wehn's articles but also contributions from various other writers. Similar to Kronschnabl's book, Wehn's research is successful in addressing key questions of technical context and its implications for filmmaking on the Internet, and provides an interesting foray into the business model of new media in general, illustrated by the example of webfilms.

2.6.4. Summary: Studying the Webfilm

Research on webfilms so far is sparse, and it is telling that the two existing studies are 'work in progress' – Kronschnabl's 'plugincinema' site and the accompanying

book are part of her PhD research, while Wehn's website and seminars on 'Animation on the Internet' form the basis of her postdoctoral research project. Both authors study webfilm as separate object of art and categorise films on the Internet as films. Thus, their research uses established categories of film analysis to examine webfilms, while simultaneously providing a technical guide to help achieve what they consider the key to filmmaking on the Internet: that 'everybody can be a filmmaker'.

This research however aims to study webfilm not as separate art object but instead in the networks that produce it. The underlying argument is that new media cannot be researched using established theories and methodologies. Instead, new media studies require a move away from concepts of separate identities and a move towards a concept of sociotechnical networks, where agency has replaced identity as category of analysis. It is argued here that a webfilm cannot be studied as a separate object, produced by an individual. The great increase of technological agents in its production, consumption and distribution illustrates how the networks in which a webfilm exists are crucial to its understanding. This research proposes that the form of webfilm cannot be discussed without addressing underlying questions of the definitions of film and new media and the way media forms are embedded in their technological process of production and consumption. Furthermore, the location of webfilm between film and media questions the strict separation of media forms. Bolter and Grusin (1999) for example have argued convincingly for the impossibility of separating different media forms (see 2.4.3.). They assert that all media today exist in interplay and interrelation with one another. The concept of identity, which lies at the heart of the separation of subjects and objects, is consequently replaced by the concept of agency. Agency is located in sociotechnical networks and all media, according to Bolter and Grusin, only exist in such networks of technological, sociological and economic contexts. This research thus argues that a webfilm is not a separate media form. Instead it is constituted not only by its content but also its economic and social function – it is a hybrid “in Latour’s sense” (Bolter and Grusin 1999: 67). To conclude, the implications for studying webfilms in this thesis are as follows: (i) A webfilm is not a separate entity and thus cannot be studied only as separate aesthetic object, (ii) The Internet cannot be considered merely a new

distribution and publication platform for ‘old’ media forms –webfilm is not ‘film on the Internet’. Instead, the webfilm shall be studied as and how it emerges in a network of human and technological interaction. A successful interaction of human and technological agents is crucial to a webfilm’s production, consumption, and distribution. In investigating webfilm, what is studied is the various sociotechnical networks in which it emerges.

3. Methodology

3.1. Initial Methodological Considerations

In the previous section, this research described and reviewed the field of new media studies and discussed the few existing studies of webfilm. It was pointed out that the wider context of the relationship of technology and society lies at the core of any study of media technologies and that the increase of technologies and in particular the widespread use of the Internet suggests a reassessment of this relationship. Reviewing various approaches to the relationship of technology and society, this study rejected any theory that was based on a dichotomy of society and technology. It thus excluded an analysis of technological determinism, which views technology as the sole force driving social and cultural change (McLuhan 1964; Virilio 1997). It furthermore rejected theories of social determinism, which considered human agency at the centre of change, emphasising the exclusive role of society in determining technological change (Williams 1974). Not only was it argued that these mutually exclusive approaches were unable to explain the relationship of society and technology, but also, any a priori distinction between the two fields was deemed impossible. In its place, it was argued that the relationship of technology and society is mutually constitutive and based not on an opposition but on a sociotechnical ensemble, in the sense of Latour (1991; 1993). The second underlying theoretical principle to the research is Foucault's concept of discourse. Principles of discourse analysis have informed the critical review of the culture and literature of 'New Media' and will be used to investigate texts that form part of the webfilm networks. As a methodological approach, discourse analysis is here considered part of actor-network theory. Overall, while actor-network theory is used to foreground the role of material reality in social analysis, discourse analysis is used both as a methodological tool to analyse text and as a means to trace change in webfilm culture between 1997 and 2005.

3.2. Methodological Framework

3.2.1. Actor-Network Theory

Actor-network theory (henceforth ANT) encompasses a number of different methodologies including ethnomethodology, discourse analysis, semiotics, and others. The theory is discussed in more detail in 2.2.3. Law and Hassard's (eds.) book *Actor Network Theory and After* (1999) provides an overview over the differing interpretations of ANT and illustrates some 'ideological' differences that have arisen within the field. For example, Law in his contribution traces the development from the original conception of actor-network theory to what it has become, via a process of translation, signified by the more simplistic acronym of 'ANT'. In Law's 'history' of actor-network theory, the theory started as a semiotics of materiality. Closely related to the school of semiotics and Foucault, the main difference was that actor-network theory applied semiotics to *all* materials rather than just language. The focus of examination was how durability is achieved, that is, the stabilisation of a network which in turn makes it real: "How is it that things get performed (and perform themselves) into relations that are relatively stable and stay in place" (Law 1999: 4). According to Law, the main problem that arose out of the original conception of ANT was that it seemed to be apolitical and tended to ignore "the hierarchies of distribution... it is excessively strategic, and it colonizes what Nick Lee and Steve Brown call the 'undiscovered continent' of the Other" (Ibid: 6). Thus confronted with the criticism, Law suggests two possible solutions in his theory of the actor network. Firstly, it could be argued that the theory is indeed a descriptive one and thus does not need any 'politics'. Alternatively, he suggests interpreting a network as a form of spatiality and thus to acknowledge that, as a spatial form, it will not only restrict what is possible but also homogenise the possible links:

it imposes strong restrictions on the conditions of topological possibility. And...it tends to limit and homogenize the character of links, the character of invariant connection, the character of possible relations, and so the character of possible entities.

(Ibid: 7)

In Law's theory of ANT, it is the second position that is most promising in 'updating' the theory of ANT. This position acknowledges power relationships within a network, thus injecting it with a political stance. While Law thus discusses ANT and its theoretical implications, Latour, in his contribution, rejects such an overall theory of actor-networks. He takes apart the 4 aspects making up the term ('actor', the hyphen, 'network', and 'theory'), arguing that this umbrella term with its associated terminology may be responsible for what he perceives to be the dogma of ANT. Of these 4 parts, Latour considers the term 'theory' especially problematic since this implies a political aspiration (i.e. a social theory) that, according to Latour, had originally not been the intention of analysis. He argues that, due to the word 'theory', ANT is often criticised for being 'apolitical'. For Latour, actor-network is not a theory but a means of doing ethnomethodology, with a focus on understanding not only what the actors do but also why and how they do it:

For us, ANT was simply another way at being faithful to the insight of ethnomethodology: actors know what they do and we have to learn from them not only what they do, but how and why they do it. It is us, the social scientists, who lack the knowledge of what they do, and not they who are missing the explanation of why they are unwittingly manipulated by forces exterior to themselves and known to the social scientist's powerful gaze and methods.

(Ibid: 19)

Thus, while Law in his contribution considers a possible political direction for ANT, for Latour, ANT is "a method and not a theory" (Ibid: 20). Latour additionally argues that any political implications that ANT might have, have not been explored. In this view, a social theory that does not claim to explain actors' behaviour and reasons will have very different political implications. Thus, it cannot be assessed by parameters of a more conventional social theory. Latour concludes by providing his definition of ANT: "It is a theory of the space or fluids circulating in a non-modern situation" (Ibid: 22).

Law and Latour are only two examples of the different interpretation of actor-network theory. Despite its theoretical heterogeneity, the approach is nevertheless most suited to an investigation into webfilm. Actor-network as a theoretical concept provides an excellent framework within which to observe and report on artefacts that

exist at the crossing of technological and human interaction. It does so by rejecting any dichotomy of technology and society, replacing it with a concept of a mixed nature of the social and the technical. In ANT, any artefact is simultaneously real, social, and narrative, and 'reality' is constituted by hybrid networks composed of heterogeneous entities that in turn are undergoing continuous change. Crucially, ANT replaces the notion of identity (which is key to the dichotomy of society and technology) with that of agency, which is a property of humans, non-humans, and networks. For an actor network methodology, this means that agency, rather than identity is at the core of analysis and thus it allows for a discussion of technology as agents that, together with human agents, constitute a network of interaction and analysis.

Hughes (1986) suggests a modified model of ANT to research science and technology. In his view, the problem with the traditional model of ANT is the absence of 'system builders', that is, nodes or agents 'designing' a system or network. He argues for an interactive approach where hard categories of analysis such as technology, science, politics, economics and the social are deprecated and discouraged. According to Hughes, hard categories work against the interconnections within a network by foregrounding difference rather than interrelation and interaction. He concludes that the history of technology can be presented in an interactive mode, in what he refers to as 'systems or networks approach' (Ibid: 285). For Hughes, this approach suits research into technological innovations such as the electric light and power systems. At its core lies the concept of 'system builder' (represented by engineers, inventors, managers and intellectuals) who creates, for example, an electric-light or power system. The system includes

interconnected components so diverse as physical artefacts, mines, manufacturing firms, utility companies, academic research and development laboratories, and investment banks.

(Ibid: 287)

These components, according to Hughes, function as a system because they fall under central control and "interact functionally to fulfil a system goal, or to contribute to a system output" (Ibid). Interestingly Hughes points out how the failure

of some system components are more obvious (such as generators), while the failure of other components are more subtle (for example, investment by a bank), but ultimately have the same effect in that they make the system collapse. Hughes suggests that historians and sociologists researching in line with an interactive model use as subject matter of their research system builders, such as inventors, engineers, managers and scientists, or the organisations over which they presided. He furthermore argues that in the interactive approach, formerly hard categories such as the technical, the scientific, the economic and the social, become soft and overlapping categories, since they are no longer rigidly separate but instead interactive and interpenetrative (Ibid: 287). Overall, the concept of systems is useful in that it emphasises the interaction of various agents within a network, as well as illustrating the heterogeneity and permeability of categories such as science, economy, and politics. Through interaction, these categories lose their categorical identity and integrity (Ibid: 289). The idea of a ‘system builder’ furthermore provides a directionality that is often absent from traditional strands of ANT. While the anthropocentric quality of a ‘system builder’ is problematic, the idea of key nodes within a network that are infused with the power to steer the system into a certain direction is useful in describing the path an actor-network follows.

In this research, some of actor-network theory’s methodological principles and concepts will be deployed. The vocabulary below is used to describe and map the mutually constitutive relationship of technology and society in the actor-network approach, and thus helps define and outline this study’s methodological framework.

Actors can be either human or non-human and they form part of material reality. Non-human actors can be artefacts such as Latour’s (1992) door-closer but can also include, in the case of Haraway’s (1986) ACT UP⁵⁷ collective, “activists, biomedical machines, government bureaucracies, gay and lesbian worlds, communities of color, scientific conferences, experimental organisms, mayors, international information and action networks, condoms and dental dams, computers, doctors, IV drug-users, pharmaceutical companies, publishers, virus components, counsellors, innovative

⁵⁷ AIDS Coalition to Unleash Power.

sexual practices, dancers, media technologies, buying clubs, graphic artists, scientists, lovers, lawyers, and more” (Haraway 1986: 323).

Networks are webs of human and non-human actors held together by various links and relations. These links have properties and characteristics through which the actors can influence the rest of the web and be influenced by it.

Boundary objects are objects that have different meanings for different groups. Star (1989) argues that boundary objects serve as mediators between different communities. They have different identities depending on their community context but they also share enough characteristics to be recognisable across the boundaries. Examples of boundary objects include artefacts such as reports and documents, but they can also include persons and more abstract concepts such as nature or the biological human body. Haraway (1986) illustrates this via the example of the biological body:

The various contending biological bodies emerge at the intersection of biological research, writing, and publishing; medical and other business practices; cultural productions of all kinds, including available metaphors and narratives; and technology, such as the visualization technologies that bring color-enhanced killer T cells and intimate photographs of the developing fetus into high-gloss art books, as well as scientific reports.

(Haraway 1986: 298)

A boundary object thus functions as a point of mediation and negotiation for different communities or interest groups. It shares enough properties to be recognisable and understandable across different parties but is interpreted differently according to its specific context of appearance. Boundary objects are often interpreted in line with a specific intention. They are often charged with a particular meaning for a group and thus are at the centre of negotiations between different interest groups.

One of the key concepts of actor-network methodology is that of hybrids or ‘quasi-objects’. These are objects that are simultaneously real, social, and discursive (Latour

1993: 91). In Latour's (1993) analysis of amodernity, hybrids are located in the nonplace between modernity's separation of nature and culture. In this 'nonplace', forms of hybrids ('quasi subjects' and 'quasi-objects') multiply. Latour argues that these quasi-objects and quasi-subjects are marked by hybridity and he describes how they not only multiply between nonhuman nature and human culture but also move in networks between the four domains of nature, society, language and general 'Being':

Of quasi-objects, quasi-subjects, we shall simply say that they trace networks. They are real, quite real, and we humans have not made them. But they are collective because they attach us to one another, because they circulate in our hands and define a social bond by their very circulation. They are discursive; however, they are narrated, historical, passionate, and peopled with actants of autonomous forms. They are unstable and hazardous, existential, and never forget Being.

(Latour 1993: 89, emphasis added).

Quasi-objects are thus located in a hybrid of reality, the social, and discourse or narrative. They are thus not fixed spatially. Latour furthermore argues that quasi-objects are not fixed temporally either. Instead of being attached to any specific temporal framework, Latour sees them as "mixing up different periods, ontologies or genres" (73). For him, they are polytemporal (Ibid):

No one can now categorize actors that belong to the 'same time' in a single coherent group. No one knows any longer whether the reintroduction of the bear in Pyrenees, kolkhozes, aerosols, the Green Revolution, the anti-smallpox vaccine. Star Wars, the Muslim religion, partridge hunting, the French Revolution, service industries, labour unions, cold fusion, Bolshevism, relativity, Slovak nationalism, commercial sailboats, and so on, are outmoded, up to date, futuristic, atemporal, nonexistent, or permanent.

(Ibid: 74)

As a result, Latour proposes to conceive of time spirally rather than a line (Ibid: 75).

Inscription (prescription) is an act or process through which either human or non-human actors impose a specific behaviour onto other actors. That is, the properties of

an actor result from inscriptions by other actors. Latour (1992) uses the example of a door-closer. Since a considerable force is required to open a door with a door-closer (due to its weight), it is inscribed into the door-closer the kind of people that can and cannot use it. For example, elderly and disabled people are excluded from passing through the door. Latour argues that the non-human actor here 'speaks' through its prescription in that it silently allows and prohibits respectively certain people passing through the door. Thus, programs of action are inscribed into a piece of technology and consequently technology becomes an actor imposing its inscribed program of action on its users (Latour 1992: 232ff). There are both weak (flexible) and strong (inflexible) programs of action. An example of a weak program is a hammer, since it has various uses and does not prescribe one single use - you can use it to pull out a nail. An assembly line, on the other hand, is a strong program of action, since it rigidly prescribes only one action. Other examples of artefacts inscribing patterns of use include instruction manuals, work routines, and social conventions.

Translation (delegation) refers to the transformation of a major effort into a minor one. This transformation is achieved by delegating a task to another actor. The actor can be either human or non-human. Latour (1992) illustrates the process of translation using the example of an automatic door-closer. A door-closer is the result of translations of various actors (a sign asking users to close the door behind them, followed by a human door-closer) into the one actor only. That is, the task of closing the door has been delegated via a process of translation to an automatic door-closer, thus simplifying the effort. For Latour, this delegation (or translation, substitution, passing) is the main and ongoing activity within a network – it consists of the continuous passing of messages. Furthermore, via the translation operation, crucial social links are established (Latour 1992: 124). For Latour, the processes of inscription and translation are the two key actions characterising the relationship between non-human and human actors. Both human and non-human actors are thus able to act upon one another via translation and inscription. It is the translation carried out via actors' inscriptions that enable actors to transfer their attributes and properties to other actors in their immediate topologies (at various levels), subject to actors', links' and topologies' degree of openness. The processes of inscription and translation are in constant flux and iterative in nature thus enabling a relative stability

in the corresponding network. The perceived stability is performative in nature and enables entities in any given network to maintain them.

There are a number of methodological principles, which shall function as guide or toolkit for the researcher, providing a background and means of approaching the object of study. These principles, together with the terminology outlined in the previous section, constitute the main methodological framework of this study.

The first principle is that the network of study has to be defined from the endless possibilities of networks that form its backdrop. For example, in the case of webfilm, the network could include film culture and film history, computer science, the development of the Internet, art and design, computer hardware and software, film analysis, interactive narrative, visual forms such as games and screensavers, history of computing, digital cameras, history of animation, styles of animation, short film, etc. In terms of methodology, this requires the researcher to make judgements on what is and what is not relevant to her particular line of inquiry. Consequently, it is necessary to delineate the context of study from the backdrop of all possible networks. As a result, the networks chosen are specific and relevant to the particular line of inquiry but they are not exhaustive. Instead, their scope is necessarily limited. The operations that may be performed on the established networks are varied. They may be chunked into discernible units of analysis, and thus investigated in parts. Sometimes, the analysis might want to focus on one particular node of one network. Thus, the researcher can zoom in and out of the networks in order to investigate any of its nodes in close-up. For Latour (1993), it does not really matter what the focus of attention is,

...so long as they are all talking about the same thing, about a quasi-object they have all created, the object-discourse-nature-society whose new properties astound us all and whose networks extends from my refrigerator to the Antarctic by way of chemistry, law, the State, the economy, and satellites.

(1993: 144)

The principle of mapping of or tracing the network is explained exhaustively by Latour (1991, 1993). He considers the strategy of mapping at the heart of any

network analysis. He proposes to map out evolving networks, including actors, artefacts, procedures, and intermediary links with the aim of understanding the mediations and mediating influence of artefacts, cultures, and political agendas with respect to a network. The strategy of mapping includes defining trajectories by actants' association and substitution, defining actants by all the trajectories in which they enter, following translation processes, and varying the observer's point of view. According to Latour, this strategy of mapping and tracing leads to an exhaustive description of a particular network that thereby simultaneously explains it. For him, the aim is to display a sociotechnical network and to describe it, rather than explain it. In Latour's argument, description equals explanation. The principle of tracing a network lies at the heart of the descriptive process.

Within a network, an important methodological principle is to follow translation. Following translation means to follow the main and ongoing activity within a network. One act of translation relates to the transformation of a major effort into a minor one. Translation often involves the stabilisation of a network. That is, in following translation, a researcher investigates how aspects of a network or a specific network itself become stabilised and de-stabilised, and how unstable existences turn into stabilized essences and vice versa (1993: 134). Crucially, the quasi-objects in these networks are no longer passive intermediaries but active mediators – “actors endowed with the capacity to translate what they transport, to redefine it, redeploy it, and also to betray it” (p. 81). Thus, following translation also involves examining the interaction between humans and objects (technology), describing the web of relations between coequal players.

Latour argues that the principle to ‘follow the actor’ was first used by Hughes (1983) in his study of Edison. The strategy is to document and record the actors' actions: “We wish to be able to follow both the chain of speakers and their statements and the transformation of speakers and their statements” (Latour 1991: 106). Following the actors furthermore means that a researcher has no pre-defined conception of the process being studied. Rather, she follows the actors in order to understand how they build their social and natural worlds. This strategy gives a researcher more

information regarding actors' actions and beliefs, since she does not impose her own grid of interpretation on the actors, but instead observes them.

Closely related to the principle of following the actor, the actors that are being followed furthermore need to be listened to by the researcher. Since the actors that form part of a network define their own frame of reference, the researcher must let them speak and she must not impose her own meanings upon them. Instead, by letting them speak, she remains within the actors' frame of reference. The researcher functions as a 'reporter' of the actions and negotiations happening within the network. Since many actors such as artefacts are mute, they need to speak via a spokesperson. Spokespersons can be human or non-human. An example of a human spokesperson is a chairperson or director introducing a new product, for example, a new games console. A non-human spokesperson is the instruction manual that comes with a games console. Thus, a spokesperson makes the non-human actor 'speak'.

3.2.2. Discourse Analysis

There are a number of different definitions of the term discourse, depending on the research context and tradition deployed. Titscher et al. (2000: 25f) provide a good overview of the multitudinous meanings of discourse. The definition used here is based on Foucault's (1972, 1977b, 1981) theory of discourse. For Foucault, 'discourse' is a system of knowledge production constituting systems of meaning that are infused with power. Texts or discourses do not represent or reflect any given 'truth' but instead shape and create it. Thus, reality is socially constructed by means of discourse.

A central aspect of Foucault's understanding of discourse relates to power. Since reality is constituted by discourse, discursive practices such as speaking and the written word produce and iterate power relations that are often unequal. This is because these practices represent what they speak of as 'real' or 'true' while simultaneously concealing the conditions of their existence. Meaning thus becomes naturalised and the dominant knowledge system gains the status of 'truth', exercising

power by excluding other, alternative discourses.⁵⁸ Within this theory of discourse, an important site of resistance lies in understanding the change of discursive formations. Foucault argues that both the formation of identities and the related hierarchies are not only socially constructed but also a function of historically specific discourses. Consequently, discontinuities, disruptions, variations, and change with regard to dominant discourses and knowledge systems all map possible trajectories for resistance. Discourse analysis is often politically motivated, for example in the method of critical discourse analysis. Its main aim is to uncover the discourses that constrain the production of dissent or difference and in those that enable alternative and different knowledge. For the purpose of this research, discourse analysis provides a methodological framework to investigate the role of discourse in creating knowledge about webfilm, that is, a ‘webfilm discourse’. It is argued that both literal and visual texts about webfilm create a reality or truth of webfilms, thus “form [ing] the objects of which they speak” (Foucault 1972: 49). The thesis itself, by creating a respected piece of writing on webfilm theory and culture, is helping to iterate this reality of webfilms by ‘speaking’ its discourse in the context of a respectable institution (Queen Margaret University College).

Discourse analysis as a methodology is here considered part of the main methodological approach of actor-network theory. A number of aspects underline the similarities of the two approaches. ANT’s emphasis on the network as main unit of analysis resonates with discourse analysis’ interest in the context and historicity of systems of meaning. That is, in both approaches there is a move away from fixed understandings of identity and reality to localised, context-dependent forms of knowledge. Both furthermore share an interest in agents that either constrain or enable other agents. In ANT, this is signified by actions that an actor can prescribe onto another actor, while in discourse analysis this is represented by the power of discourse to allow or exclude other discourses. Lastly, the concept of intertextuality and interrelation of discourses with not only other discourses but also social and historical conditions resonates with ANT’s principle of mapping and tracing a

⁵⁸ Examples include identity categories such as race, sex, gender, and class. A white middle-class male has more discursive power than a black lower-class female. This is a fairly crude example - see Foucault’s (1977a) research into the social construction of punishment for an extensive investigation into the relation of power and discourse, and the ways in which this power is internalised and controls individuals, their knowledge, and their bodies.

network. Overall, then, it is argued here that discourse analysis is a form of ANT, albeit with a stronger interest in power relations and hierarchies, and more politically charged than ANT. With a different terminology and with less emphasis on materiality, it is nevertheless a useful methodological tool to help analyse actor-networks at micro-level, especially in the form of texts, and for tracing discursive changes in the network.

3.3. Methods

The research methods deployed in this study will be of qualitative nature. Qualitative methods are appropriate to in-depth research that focuses on a process rather than examining an existing state of affairs. Qualitative methods are furthermore suitable to extensive and detailed description of phenomena on a small scale. The preference of qualitative methods is closely related to the philosophical and theoretical approach of the researcher who seeks to describe a specific number of circumscribed networks.

3.3.1. Data Collection

The great majority of qualitative data will be collected online, i.e. on the Internet. Given that the object of study, webfilm, is located on the Internet, it is appropriate that the data be collected from online resources. Thus, the means of data collection suit the research topic. Methods of traditional qualitative data collection include the use of interviews, focus groups, media such as video, audio, and photographs, participant observation, and the use of archives, records and other documentation. Many of these methods translate easily to online methods of qualitative data collection. For example, face-to-face interviews can be translated into real time chat using chat rooms or IRC/ mIRC, while questionnaires can be held as online surveys or via email. With regard to the use of archives, records, and media, the Internet provides access to many of these in a multimedia environment. While original records, documents and literature still have to be accessed offline, for the purpose of this study, all webfilm networks researched are available online and thus provide access to the data in their original and intended environment. The qualitative methods of data collection for this study are chosen according to their suitability and

sensitivity towards the research target and the object of study. This study collects its data on the Internet. Webfilms will be studied in their online environment (as part of entertainment portals and as part of independent art sites) and records will be collected that pertain to the development of webfilm as film form, including press releases, online documentation, articles, artist statements etc. The researcher may also gather information by lurking and/or participating in online film forums, Internet discussion forums, chat rooms, and newsgroups.

3.3.2. Case Studies

The case studies section of this research will investigate three webfilm networks in detail. These case studies are undertaken in order to acquire an in-depth understanding of the dynamics surrounding the various webfilm networks and the negotiations in which the respective network actors participate. For all three case studies, a combination of analytical methods as outlined in the previous section will be deployed.

The first proposed case study is the network of webfilm production and consumption ('prosumption'). Here, the study follows the development and implementation of a webfilm in the network that leads to its publication. At its core lies the principle of symmetry between humans and nonhumans, and thus both human and non-human agents of webfilm production and consumption will be traced and interviewed.

The second case study examines some of the nodes in the network of webfilm distribution and exhibition. Here, the focus is on mapping differences and similarities of traditional media and new media distribution and exhibition practices. The objective is to trace both old and new channels through which webfilms are consumed and passed on, and assess the role of new distribution methods regarding short filmic forms of entertainment.

The last case study turns to webfilm discourse and culture. Here, textual agents including manifestos, statements, and webfilms themselves are at the centre of analysis. A methodology of discourse analysis is deployed to follow the actors engaged in the construction of 'webfilms' as cultural and theoretical form. A special

emphasis lies in mapping the change in webfilm discourse in a constitutive context of technological and economical change.

This study is guided by three general research questions: (1) How are non-human actors involved in the creation of a specific form of media (webfilm)? (2) How did 'webfilm' arise as (new) form of film? (3) How useful is actor-network theory as a methodological and theoretical tool to study new media? These general research questions guide the investigation in the case studies.

3.4. Researching the Internet

3.4.1. The Researcher's Position within the Networks

The researcher's position within the networks under investigation is central to a successful and authoritative analysis. It is argued here that, in order to research an online media form, the author herself has to enter the networks as 'new media agent'. She thus functions as prosumer⁵⁹ within the webfilm networks under investigation. A number of characteristics are central to this configuration. Firstly, the new media agent has a considerable online history. She first accessed the Internet in 1996, using a 56K modem and an old 486 PC. Over the years, she has witnessed and experienced a number of changes in the configuration of the networks. This includes changes concerning technological (improvements of software, hardware, and bandwidth), economical agents (reduction in price) and general political and cultural change pertaining to new media both in the UK and Germany. A second characteristic of the researcher as new media agent relates to the amount of time spent online. She spends on average 50 hours per week online using an always-on ADSL connection. She uses the Internet primarily in professional capacity and works part-time as Internet community moderator of both chat rooms and discussion forums. Finally, the researcher is an experienced prosumer within the networks under investigation. She has prosumer competence with regard to technological agents such as software, hardware, and bandwidth and regularly interacts in the sociotechnical ensemble, prescribing actions into her co-agents and alternating in agency with software,

⁵⁹ For a discussion and definition of the term 'prosumer', see 2.1. and 4.2.

hardware, and bandwidth. The researcher furthermore has prosumer experience in creating and exhibiting webfilms.

3.4.2. Internet Data

It has been postulated in 3.3.1. that, in order to study an object located primarily online, it is appropriate that the major part of data also be collected online. Internet data is thus a crucial agent in the networks under investigation, and its use represents a central methodological tool to follow and describe the various networks of webfilm. The strategy of collecting and sampling Internet data will be deployed throughout all three case studies. The data itself will include news sites, dictionaries, search engines, online video, press releases, online documentation, articles, artist statements, forum topics, and others.

3.5. *Problems and Limitations*

3.5.1. Actor-Network Theory

The main line of criticism facing ANT is its apolitical stance. The approach is largely descriptive, that is, investigating how a network works rather than why. In addition, there is no differentiation within a network between human agents and non-humans, including material objects, technology, organisations, and animals. Attributes such as intentionality, which are a fundamental characteristic of humans, are absent. Furthermore, ANT disregards any pre-existing structures that are external to a network. This includes power structures, cultural norms, social and political aspects, etc. For Latour, there is nothing outside a network – if something is missing it is not because of the existence of external or global causes, but instead because “the description is not complete” (Latour 1991: 130). It is argued here that these limitations of ANT constitute a crucial defining aspect of its methodology. For example, the focus on agency in place of identity means the actions and interactions rather than separate subject-identities are at the centre of analysis. A configuration of structurally equal agents that are juxtaposed instead of dichotomously opposed is political at a fundamental level. Rather than devaluing human actors, it provides an alternative to Western anthropocentric discourse that is based on hierarchies and

binary exclusions. In addition, ANT does not deny the existence of power relations. Instead, it argues that they emerge from the actions of agents within networks. Consequently, there is scope for a political and moral stance. However, in order to take any such position, the network and the power relations within have to be mapped and described first. Once the description is complete, an evaluative position is possible. There are additional ways to politicise ANT. For example, Hughes' (1986) concept of system builders allows agents to design aspects within a network. These system builders are often humans (such as engineers or inventors) and try to form alliances with co-agents to strengthen their position and to exert power within a network. Following Hughes, it is possible to distinguish agents that are more influential from those that are not, and the power the various agents exert within a network is fluid and not fixed and therefore subject to change. Overall, actor-network theory is not by definition apolitical and relativist. It may be that a methodology that is concerned mainly with descriptive analysis is more suited to studies of technologies rather than those of any wider social concern. Its focus on description means that it is less suited to research that aims to influence policy and that places an emphasis on a political stance. With regard to this study, the main emphasis is on describing the networks of webfilm. The research is less concerned with a moral and evaluative position; however, power structures within the networks will be traced as and where they occur.

3.5.2. Doing Internet Research

While it is argued here for a methodological strategy that both places the researcher within the networks as new media agent, and that relies heavily on Internet data, this approach has a number of problems and limitations. The problems pertain primarily to the nature of Internet data. The first issue is the disappearance of data. This can either be temporary (the server where the data is hosted has gone down) or infinitely (the data is no longer hosted anywhere; the website is no longer accessible or available). This problem can partly be addressed by consulting the Internet Archive (<http://www.archive.org/>). The Internet Archive is primarily an 'Internet library' but also stores archived web pages of sites that no longer exist, from 1996 to the present day. This part of the Internet Archive is accessible using the Wayback Machine

(<http://www.archive.org/web/web.php>), a function to search the archive. The Wayback Machine is

... a service that allows people to visit archived versions of Web sites. Visitors to the Wayback Machine can type in a URL, select a date range, and then begin surfing on an archived version of the Web. Imagine surfing circa 1999 and looking at all the Y2K hype, or revisiting an older version of your favorite Web site. The Internet Archive Wayback Machine can make all of this possible.

(Internet Archive n.d.: 'About' – 'FAQ')

There are some limitations to accessing data in this manner. Firstly, the sites on the archive servers are often not exact copies of original websites. While plain html is always reproduced, dynamic content (javascript, dhtml) and visual and audio media (images, video, audio) is often missing, partly due to the difficulty archiving such data correctly and also due to the size of especially visual and audio data. Furthermore, not all lost web content is accessible using the Wayback Machine, as it relies on the activity of a web crawler to crawl the Internet automatically, adding new websites as and when it finds them. Overall, however, the Wayback Machine is a useful tool in accessing data that has disappeared from the World Wide Web, and will be accessed where original websites are no longer available. The second problem with regard to Internet data is the question of its accuracy. Given that the Internet is a medium where consumers are often simultaneously producers, and given the amount of data available, the researcher has to take considerable measures to ensure that, where appropriate, the data is factual and not fictitious. This is the case mainly with regard to texts pertaining to factual and news stories – creative texts, pamphlets, mission statements, manifestos, forum discussions, and other forms of Internet data are exempt from this (though some of this data may have other problems such as issues of copyright and intellectual property). One important method to assure the authenticity of news and other factual current affairs texts is by consulting and cross-referencing reputable sources, in particular, using the BBC website. It is assumed here that, if a story is published on the BBC website, the corporation's strict quality control mechanisms will ensure that the information is accurate and factual. Finally, researching Internet data is problematic due to the large volume of data available. In April 2006, a survey found the number of websites to be

more than 80 million (Netcraft Web Server Survey 2006). This fact, combined with the problem that many websites are very difficult to find due to hierarchies of visibility caused by search engine rankings, means that data found online will always necessarily be limited. All data collected as part of this research, therefore, will only be a small representation of the actual overall Internet data existing on the subject matter.

Overall, this section sought to map out the methodological framework for the Internet researcher and outline strategies specific to engaging with an online object of study. While actor-network theory provides the overall theoretical and methodological background to this research, the author contends that, in order for her to appropriately and authoritatively investigate the online object of webfilm, it is necessary that both the data and the researcher herself enter the network under investigation.

4. Webfilm Network 1: Actants of Webfilm Production and Consumption

4.1. Introduction

The first case study follows the development and implementation of a webfilm in the network that leads to its publication, including the processes of production and consumption. At its core lies the principle of symmetry between humans and nonhumans, and thus both human and non-human agents of webfilm production and consumption will be traced and interviewed. The network exploration starts by investigating the human actor of the webfilm: the prosumer. The prosumer is a key concept of any new media network, illustrating the convergence and permeability that characterises much of new media discourse. Subsequently, the case study considers technological agents of webfilm production and consumption. Here, hardware and one specific example of software are discussed in more detail, while further prosumption agents can be found in the appendix. Finally, this case study describes and traces two agents of webfilm transmission. The greater focus on non-human rather than human agents throughout serves to illustrate an exercise away from the anthropocentric discourse that penetrates much of academic and popular culture. It is also representative of the first phase of moving images on the Internet, which was characterised by a high degree of reliance on technological agents with which human agents had to cooperate and interact, often within strong technological prescriptions.

4.2. Human Agents of Webfilm Production and Consumption: Prosumers

The term ‘prosumer’ is a contraction made of two words. While the second word is always ‘consumer’, the first word varies, depending on the definition and context of use:

prosumer (proh.SOO.mur) *n.* **1.** A consumer who is an amateur in a particular field, but who is knowledgeable enough to require equipment that has some professional features ("professional" + "consumer"). **2.** A person who helps to design or customize the products they purchase ("producer" + "consumer"). **3.** A person who creates goods for their own use and also possibly to sell ("producing" + "consumer"). **4.** A person who takes steps to correct difficulties with consumer companies or markets and to anticipate future problems ("proactive" + "consumer").

(McFedries, P. and Logophilia Limited 2000)

The first definition is also most widely used. 'Prosumer' here is synonymous with semi-professional and the term is used in the context of technology. For example, many digital cameras and video equipment in general fall into the 'prosumer' category and are often advertised as such. Don Sutherland (2005), in an article on prosumer cameras, defines digital prosumer cameras as ones that "offer higher quality and more advanced features than the lower-end consumer variety, but still do not possess all the features of the most professional units on the market. In other words, the highest of the high-end before that great leap into the pure "professional" realm, however that's defined".

The second definition of 'prosumer', merging 'producer' and 'consumer', was originally coined by Alvin Toffler. He was the first to use the term 'prosumer' in his book *The Third Wave* (1980) to describe a future type of consumer involved in the production of goods. Toffler argues that the prosumer is the answer to market saturation and consumers' dissatisfaction with highly standardised products. His consumer-as-producer participates in designing and creating products thus helping to initiate a process of 'mass customisation'. In Toffler's view, producing customised products on a great scale with prosumers' input is the solution to market saturation. At the heart of Toffler's concept of 'prosumer' thus lies a more active consumer, replacing a model of passive consumption where products are created by a small number of producers for a great mass of passive consumers.

The third and fourth definitions of 'prosumer' are vaguer and less common than the first two. 'Producing consumer' seems to correspond to the third meaning of 'prosumer' in Wikipedia's (n.d.b) discussion of the term. Here, consumers turn into

producers to exclude or diminish the role of corporate producers. That is, ‘producing consumers’ subscribe to a DIY (do-it-yourself) ethic and try to live somewhat outside capitalist economy, resisting capitalist consumption. Here, prosumption has political connotations. Other prosumer activities in this meaning of the word include growing one’s own food and repairing clothing and other items instead of buying them new (Ibid).

Lastly, the fourth meaning of ‘prosumer’, according to the definition, is a contraction of ‘proactive’ and ‘consumer’. This usage of ‘prosumer’ is mainly a construct of marketing and refers to an ‘empowered consumer’ who is “culturally and socially aware, building a composite identity of consumer brands and *taking an active role in choosing a product or service*” (The Motive Internet Glossary 2004). This prosumer is a more powerful consumer as s/he has access to relevant information 24/7 (for example via the Internet) and consequently has more product choices, more media options, and is more aware of marketing strategies. S/he

gets a rush from discovering new things - Is a transporter of trends
- Pursues "timeless" value - Seeks out new challenges and new experiences - Recognises his or her value as a consumer-and expects brand partners to do likewise - Is marketing savvy and plugged in to multiple media sources - Demands top-notch customer service and unlimited access to information.

(PR Newswire 2001)

This type of prosumer thus presents a challenge for businesses and marketing since s/he is seen as more knowledgeable and more difficult to please. At the same time, however, the proactive consumer for marketers is also a trend-spotter and likely to follow trends and pass them on, thus turning his or her personal opinions into part of a highly effective marketing strategy, especially on the Internet:

Think personal referrals, ‘send a friend this link’ and email postcards. All of these devices are examples of savvy marketers understanding and providing an outlet for prosumers to make public their personal views.

(The Motive Internet Glossary 2004)

Overall, the four definitions of ‘prosumer’ currently coexist with no clearly dominant usage. The first two definitions, ‘producer consumer’ and ‘professional consumer’ are the most common ones at the time of writing (2004). Given that context is vital to the usage of the term, there is little room for misunderstanding since the various uses are intimately tied to their context. The only overlapping meanings can arise when a prosumer (producer-consumer) uses a prosumer (professional-consumer) camera; however, the latter is mostly used as adjective while the first one is used primarily as a noun. For the purpose of this study, both ‘producer-consumer’ and ‘professional-consumer’ will be used albeit with a clear dominant use of the noun ‘prosumer’, referring to a consumer who is also a producer and vice versa.

The increasingly closer relationship between ‘producer’ and ‘consumer’ has been observed by a number of theorists, especially in the area of new media. Manovich (2001: 119) contends that computers are the ultimate interface for both the merging of work and leisure as well as that of producer and consumer. Applications such as Microsoft’s *Word* are used in both professional and consumer contexts. Most notably, Manovich sees consumers turning into producers in the area of computer games - by entering cheat codes or creating new levels, the consumer-as-producer can alter a game’s defaults. While not using the term ‘prosumer’ to describe this new type of computer user, Manovich’s theory of new media clearly has at its core the closure of the gap between producer and consumer. For Manovich, the new consumer/producer is a product of the ‘information society’.

For Martin Lister *et al.* (2003: 34), ‘prosumer’ similarly forms part of contemporary culture. Prosumers and the associated breakdown of traditional categories of production and consumption lie at the heart of Lister *et al.*’s definition of new media. Unlike traditional media, which are characterised by a one-to-many way of communication (few producers and many consumers), new media has a many-to-many communication model (many prosumers). This is because in new media, it is easier and far cheaper to become a producer than in traditional media. The most obvious examples are creation of personal homepages, blogs, webfilms, and audio files that can be created on the computer and uploaded instantly, potentially reaching

a huge audience. Lister *et al.* use the term ‘prosumer’ to describe this new kind of media consumer, who is simultaneously a producer. Computers, in this framework, are the ultimate ‘prosumer’ machines, since they can be used for production, consumption, and distribution.

In both Manovich’s and Lister *et al.*’s accounts, computers are central to an understanding of prosumers in new media and the associated blurring of boundaries between producer and consumer. It is argued here that prosumer culture has considerably increased since the first years of the Internet. This is illustrated by the trend in recent years to use ready-made building blocks to create online media, particularly websites. The production of a website has thus changed from mainly hand-coding of html to using an ever-increasing availability of software and ready-made templates (such as on web template site *Elated*). This has sharply decreased the necessity of producing any website from scratch. It is no longer necessary for the owner of a website to do a great amount of html coding; instead, all that is required is choosing a template and then adapting it or selecting from a number of predefined options. Thus, website ‘production’ is often a case of collating ready-made objects and adapting them to one’s own requirements. This often includes copying source code that a producer has seen elsewhere as consumer of a different page, and subsequently altering it depending on the needs of their own page. Thus, the consumption and production of a website go hand in hand since the material used in production has often been consumed before or created by other prosumers. The same merging of production and consumption applies with regard to production of web animations or short films. Here, it is common to use sounds or visual media that already exist (for example audio sample CDs; sample still images). Often, what is used in production has been consumed elsewhere by either the creator or other prosumers.

In the specific context of webfilm creation, the person who produces it is similarly their webfilm’s consumer and vice versa for a number of reasons. First, we have seen that computers are the interface for both webfilm production and consumption and thus prosumer machines. Furthermore, consumers’ technical set-up (hardware and

software specifications; Internet connection speed) determines to an extent the viewing experience of webfilms. This may involve having to select from various media players, differently sized video windows, higher or lower quality depending on bandwidth, and the occurrence of stuttering and loss of frames due to low computer memory (RAM). To the extent that the visual end-result depends considerably on consumers' own set-up, they co-produce webfilms.

Producers, on the other hand, have to turn into consumers in a number of ways. For example, producing a webfilm often involves sampling existing audio, video, still images and 3D files which are subsequently adapted. Producers themselves are often consumers of these various samples and source files prior to using them in their own production. Moreover, due to greatly varying consumer computers' set-ups including different bandwidths, formats, and media players, producers have to turn into consumers in order to anticipate the best and biggest audience for their film. In practice, they have to test their film in a wide variety of technical contexts in order to account for the varying visual end product of their film. If producers decide to embed their film into a webpage, additional considerations such as using web templates, hosting account etc. furthermore blur the identity of webfilm producers.

One final aspect of the merging of consumer and producer is the increased permeability of the two categories. It is common for webfilm consumers to turn into webfilm producers via competitions such as the *Star Wars* Fan Film awards. Hosted by Lucasfilm and AtomFilms, fans of the series are invited to submit short *Star Wars* spoofs, parodies, and documentaries and George Lucas himself chooses the main award (AtomFilms n.d.b; Lucasfilm Ltd. 2005a). Additionally, many webfilmmakers are consumers first before starting to produce their own film. Since the gap between producer and consumer has become so narrow, it is easy for consumers to step over and become producers.

Overall, then, we have seen that the roles of producer and consumer in new media and in the specific example of webfilmmaking are no longer clearly separable. Instead, the categories are much more permeable and this is reflected by substituting

‘consumer’ and ‘producer’ with the term ‘prosumer’. Throughout this thesis, the terms ‘prosumer’ and ‘prosumption’ will be used to indicate a context where the permeability of the two categories is most apparent or greatly increased. This does not mean that the terms ‘consumer’ and ‘producer’ are no longer applicable. ‘Consumer’ and ‘producer’ will still be used separately in contexts where the separation is more pronounced or necessary for the purpose of the argument.

4.3. Technological Agents: Webfilm Prosumption

4.3.1. Hardware and System Requirements

Computer hardware generally has become cheaper and faster in recent years, thus diminishing the economic aspects of the Digital Divide by making computers much more affordable. An ‘Internet ready’ PC can be anything from an old IBM 486 with external modem⁶⁰ to a Pentium 3.4 (or higher) with high-speed DSL. An average consumer second-hand model is thus affordable to the great majority of Western population.⁶¹ In professional and some consumer contexts, however, an average second-hand model will not suffice. Instead, minimum hardware specifications are frequently required which in turn influences aspects of production and consumption.

In the consumer market, the area of computer games is particularly influenced by the hardware used, and a consumer’s experience of memory and graphics intensive games depends on certain hardware requirements. Typically, if the minimum system requirements are not fulfilled, users may get a jerky image (due to the wrong graphics card and too little memory). This domestic area of games is becoming increasingly important. Many new games are more visually complex (3d games) and often have an online option, which further increases the demand on hardware. Concern for minimum hardware is thus increasingly important in the maximum enjoyment of computer games, and most games list on their case minimum system requirements. The more highly anticipated a game, the more concern regarding the

⁶⁰ The author’s first Internet PC in 1997 was indeed an IBM 486 with external modem.

⁶¹ When looking on the online auction site ebay for a 486 PC for sale (on the 2nd January 2005), the author found one on a German site with a starting price of €1, which is just over 70 pence.

hardware needed to be able to get maximum enjoyment and maximum gameplay experience out of it. A good recent example is the greatly anticipated *Doom3* (2004). On a number of sites, the hardware recommendations required to enjoy the game fully are discussed in detail:

id Software's DOOM 3 is poised to be one of the most played titles in the history of 3D gaming. Anticipation has grown to monumental levels as hundreds of thousands of people worldwide wait to experience the phenomenon called DOOM 3. Along with the anticipation, many are experiencing apprehension over the level of gameplay they expect from their current hardware. Still others, using this occasion to mull over an upgrade, have been waiting to discover which of their many hardware choices will provide them with the best DOOM 3 experience.

(...)

This guide is not an attempt to crown a king in the realm of hardware, and no direct comparisons are going to be drawn on any of our graphs. Our goal here is to help you understand where your system is positioned in terms of playing DOOM 3 and to help you choose an upgrade that will make a real difference and offer you the greatest improvement in gameplay for the money spent.

(Bennett 2004: 1)

Hardware thus has a direct impact on gameplay. For example, the effect 'Heat Haze' is only possible to be seen and experienced with a DirectX 9 level video card:

There is one feature we simply must talk about and that is "Heat Haze." Heat Haze requires a DirectX 9 level video card in order to work. This feature is enabled automatically on those cards. It's one of those awesome effects that makes the word "Wow" come right out of your mouth when you first see it. Heat Haze adds a wavy "ripple" or "mirage" type effect to objects that have heat or steam coming from them. Heat Haze is also seen on fireballs being thrown by demons and produced by certain weapons in your arsenal that create a type of energy impact.

(Ibid: 3)

That is, in the area of computer games visual and gameplay experience is influenced by the hardware used. Thus, hardware contributes to the way a game is experienced, and furthermore, depending on hardware and setup, users will experience *Doom3* and

many other recent computer games very differently. It could even be argued that there is no ultimate, fixed version of *Doom3* – instead, the game exists in many different visual versions⁶² and exists furthermore as part of a network of hardware and Internet connection speed, but cannot be separated from the network as self-contained object. The influence of computer hardware on games is replicated in most other areas of digital media production, including desktop publishing, web design, and computer filmmaking.

A key component of the relationship between software and hardware are software upgrades which occur frequently in the computer market, especially with regard to PCs.⁶³ New editions of software tend to require better hardware (such as more memory, more disk space) to run. A case in point is the difference in system requirements between the operating systems Windows95 and Windows XP Professional Edition, and thus a time span of only 6 years. While for Windows 95 (released in 1995), you need the following:

Personal computer with a 386DX or higher processor (486 recommended)
4 megabytes (MB) of memory (8 MB recommended)
Typical hard disk space required to upgrade to Windows 95: 35-40 MB The actual requirement varies depending on the features you choose to install.
Typical hard disk space required to install Windows 95 on a clean system: 50-55 MB The actual requirement varies depending on the features you choose to install.
One 3.5-inch high-density floppy disk drive
VGA or higher resolution (256-color SVGA recommended)
(Microsoft Corporation n.d.a)

For Windows XP Professional Edition (released in 2001), you need

⁶² This is illustrated by the visual examples used by Bennett (2004).

⁶³ The focus in the subsequent discussions is on PCs rather than Macintosh computers. This is because there is a significant difference in PCs and Macintosh computers with regard to hardware and software. Apple creates all aspects of the Macintosh computer's hardware and also its operating system, whereas PC hardware is manufactured by many different parties and there are furthermore a number of different companies making the PC's operating system (Microsoft, Linux, Unix). For more information, see Wikipedia (n.d.c).

Pentium 233-megahertz (MHz) processor or faster (300 MHz is recommended)
At least 64 megabytes (MB) of RAM (128 MB is recommended)
At least 1.5 gigabytes (GB) of available space on the hard disk
CD-ROM or DVD-ROM drive
Keyboard and a Microsoft Mouse or some other compatible pointing device
Video adapter and monitor with Super VGA (800 x 600) or higher resolution
Sound card
Speakers or headphones

(Microsoft Corporation n.d.b)

The greatest difference lies in the hard disk space needed to install the operating system. While for Windows 95, you need 50-55 MB, Windows XP (Pro) requires 31 times as much: 1536 MB, or 1.5 GB. Similarly, the memory needed to run Windows 95 is only 4 MB, while XP Pro requires 16x as much (64 MB). Note that the Windows XP Pro specifications provided by Microsoft include hardware that is *not* in fact required to run the operating system as such, for example sound card and speakers/headphones. Both of these are optional and only necessary if a user intends use audio on his or her PC.

Hardware is thus central to any use of a PC, and each piece of software comes with minimum system requirements. Since most off-the-shelf standard PCs at the time of writing (2004) are relatively high spec, hardware requirements are rarely explicitly discussed and tend not to come under scrutiny in a consumer setting. Instead, PC hardware has become mostly invisible and taken for granted. An exception is the area of computer games. As seen in the example of *Doom3* (2004), many new games are extremely memory- and graphics intensive and demanding, and users frequently have to upgrade their PCs in order to enjoy these games to the maximum.

Webfilmmakers have to be aware of hardware requirements and minimum specifications needed for filmmaking on a computer. Before being broadcast on the WWW, webfilms are typically created on a PC (or MAC), either as standard-size films (with a resolution of 720 x 576), which is then reduced in size and compressed to allow for web exhibition, or with a smaller resolution (such as 320 x 240). The

size of the original film depends on whether or not production is for multiple media, where a higher resolution might be necessary, or just the WWW.

The system requirements for webfilm production are very similar to those for any production of digital moving image (such as short live action films and 2d and 3d animation). Courses that teach in the area of digital filmmaking typically provide minimum PC specifications for their students. For example, London Metropolitan University's MA in Digital Moving Image has the following system requirements (for the 2004/2005 session):

Minimum Intel® Pentium® 4 Processor 2.6GHz or AMD Athlon XP2400+ Processor
Midi or Full Tower Case 300W PSU
1Gb RAM (more is preferable, but try to ensure memory uses as few modules as possible i.e. 2 x 512MB instead of 4 x 256MB Modules)
60GB minimum Ultra DMA Hard Drive (Primary Master)
60GB minimum Ultra DMA Hard Drive (Primary Slave)
Multi Format DVD Recorder (+/-RW)
CD-RW Recorder + Software (optional, but saves wear on the DVDR burning ordinary cd's)
Belkin IEEE 1394 PCI Firewire Card (This particular card is recommended after extensive testing of different types, If your supplier cannot source it or supply an alternative that is guaranteed to be compatible with Adobe Premiere and After Effects, purchase one separately afterwards from another supplier)
Iomega Zip 250 ATAPI (optional)
Minimum 17" Monitor
Nvidia GeForce FX 5600 based AGP Card (ATI Radeon 9600 based cards are just as good)
Minimum On-Board Sound (optional Creative Sound Blaster Audigy 2 ZS, with FireWire port)
Microsoft IntelliMouse Optical or IntelliMouse Explorer
Keyboard
Speaker system
3.5" 1.44MB Floppy Drive (optional)
Microsoft® Windows® 2000 Professional / Windows XP Home Edition

(London Metropolitan University 2004)

The choice of hardware influences a number of aspects of webfilm production, since not all hardware can be used with all software. Video capture cards (also called FireWire - a card used to capture digital video, i.e. to transfer it from a digital camera

to the PC) have to be compatible with the digital video software used to manipulate footage (for example Adobe *Premiere*). To illustrate this, the Pinnacle Studio DV card is not compatible with earlier versions of Adobe *Premiere* (Jay, J. n.d.). A more expensive capture card (such as Matrox RT.X10 or X100) influences digital video editing differently. It reduces time due to real-time editing which eliminates rendering (see appendix for a discussion of real-time rendering). For webfilmmaking, the choice of capture card is thus an important one. A good capture card is central to smooth and fast editing, and thus one of the key hardware components for webfilmmakers. Ideally, capture cards should be able to handle effects in real time. This is no longer a necessary requirement however because video editing software has moved forward - since 2003 and with the release of *Premiere Pro*, real time rendering can now be handled by video editing software.

The amount of RAM is another important aspect of hardware, particularly for rendering digital moving image and it considerably affects a PC's performance. In simplistic terms, the more RAM a PC has, the faster it will render special effects in Adobe *Premiere*, or 3D images and sequences in *3D Studio Max*. While it is possible to edit video on a slower system with less RAM, it will make working more difficult due to longer rendering time and an often-jerky image. Lastly, the size in hard disk space is central to webfilmmaking. This is because of the large file size of digital moving image, especially live action footage. One hour worth of footage takes up around 25GB of hard disk space. Consequently, the more hard disk space, the greater amount of digital video can be stored on the PC.

Ana Kronschnabl's and Tomas Rawlings' book on Internet filmmaking (2004) contains hardware recommendations specifically for webfilm making:

A fast processor and plenty of RAM (1.70 GHz-M and 512 megabytes of RAM or greater).

A large harddrive [sic] for storage (40 Gigabytes or more, with 72,000 RPM or more). A harddrive [sic] is the component of a computer that acts as the permanent storage space.

Capture Card (PCI capture card. Some laptops have built-in capture capability). A capture card is the name given to a device, often

installed inside the computer, that provides an extra port which the complementing device (in this case a DV camera) can plug into. This may be already installed in your computer.

FireWire or IEEE 1394 (comes as standard with most computers). This would be the type of port suggested. You should be looking for a computer with this port already installed or the capture card (above) to have this port)

DV editing software (Premiere, Final Cut Pro, VirtualDubMod, Blade etc.).

(Kronschnabl and Rawlings 2004: 115f).

Her recommendations are directed at entry-level Internet filmmakers and are thus less specific than the requirements by London Metropolitan University. Overall, the key and starting point for webfilmmakers is to consider hardware and the implications their choice of hardware has on the network of webfilm production. System requirements are central and hardware is potentially problematic in webfilm production for a number of reasons. Firstly, all software used on a PC demands minimum system requirements. This is not only true for PC games but also true for all other software, including image manipulation software such as Adobe *Photoshop*, video editing software such as Adobe *Premiere* and Adobe *After Effects*, and even web editing software such as Macromedia *Dreamweaver* and animation software such as Macromedia *Flash* (see for example Macromedia 2004). This software is central to webfilm production and, since they run best on the recommended system, it is vital that webfilm producers have a PC that fulfils these minimum requirements. Secondly, the interaction between hardware components is crucial. If a system's video capture card is not compatible with its video editing software, then digital video cannot be captured and thus transferred to the PC using this software. Lastly, the choice of key hardware components such as processor speed, amount of RAM, and hard disk space, has a direct influence on webfilm production: The less of each a webfilm producer's PC has, the more limited the options and choices s/he has with regard to creating webfilms on this PC.

Minimum system requirements are not only of key importance in webfilm production but also in its consumption. One of the biggest providers of online entertainment in

the form of webfilms, *AtomFilms*, recommends the following (PC hardware, operating system and browser) for viewing of its films:

500 mhz or faster processor with 64 Megabytes of RAM

Windows 98SE or later

Internet Explorer 5.5 or later

Netscape 6.0 or later

America Online 6.0 or later

NOTE: ON ALL BROWSERS, YOU MUST HAVE
JAVASCRIPT ENABLED AND COOKIES TURNED ON.

(AtomFilms n.d.c)

With regard to consumption, however, hardware is not as important as in the production of webfilms. Instead, in consumption, software (such as media players and plugins) and transmission factors (such as bandwidth) become crucial to successful webfilm reception. Both software and bandwidth are also central to webfilm production, especially, since webfilm producers will have to ‘test’ their films under various conditions to reach a maximum audience. Overall, then, system requirements play a crucial role in the prosumption of webfilms. However, as will be shown further below, it is only in interaction with software and transmission that hardware can reach its maximum degree of influence.

To conclude, this section examined the ways in which hardware functions as technological agent influencing the way prosumers interacts with their computer, illustrated by the example of a PC. It was argued that on the one hand, software such as games but also applications including video editing software and operating systems prescribe hardware specifications via system requirements, which frequently forces prosumers to upgrade existing hardware in order to run the system’s software efficiently.⁶⁴ On the other hand, hardware also influences the way any application is experienced by prosumers. Certain computer games require specific high-end

⁶⁴ The culture of continuous software-and hardware upgrades is highly problematic in itself, since it forces prosumers to invest infinitely in computer products that they do not necessarily require. For example, many prosumers will want the latest versions of a particular piece of software, which in turn requires hardware updates in order to run efficiently. With a short lifetime cycle of many software products, the result is a neverending cycle of hardware-and software upgrades that fuels the economy of the computer industry while creating huge amounts of computer waste that significantly pollutes the environment (Sample 2004).

graphics cards in order for certain effects to become visible, and the smooth running of a game without stuttering frame rate is greatly influenced by a computer's amount of memory (RAM). The same applies to the specific context of webfilmmaking. Here, RAM and video capture card are only two examples of the influence of hardware agents on the process of webfilmmaking. Minimum hardware requirements are furthermore prescribed for webfilm consumption, as smooth playback of a webfilm is partly influenced by aspects such as processor speed. Overall, however, the importance of hardware has diminished over the last few years because most new computers at the time of writing (2004) come with high-end specifications already in place. These computers are sufficient for general prosumer use, including webfilmmaking.

4.3.2. Software: Media Formats

There are a number of software agents in the network of webfilm prosumption. A general overview, as well as a more specific analysis of the software agent of compression, can be found in the appendix. The issue of media formats, a category of software, exemplifies the interrelationship of webfilm prosumption and software and their interdependence in the wider socioeconomic network. 'Media format' refers to the format in which digital video and audio, in this case webfilms, are stored. A media player is a piece of software that allows the playing of sound and video files on a computer and over the Internet. It can work as a stand-alone player (to watch DVDs or films locally stored on a harddrive) but also as a plug-in. As a plug-in, a player extends a browser's capabilities (for example *Internet Explorer*, *Netscape*, *Firefox*) enabling prosumers to view video files that are embedded within webpages. Media players are typically free and available for download from the Internet.

The main three media players are Microsoft *Windows Media Player*, RealNetworks *RealPlayer*, and Apple *QuickTime Player* and the most common media formats for digital video on the web are *.wmv, *.ram, and *.mov. The choice of format for webfilmmakers to encode their film in is closely related to the audiences they want to reach, since not all formats are supported by all media players. This issue of file formats and their compatibility with the three major media players is such a crucial

matter that Kronschnabl and Rawlings in their book refer to the competition between these media formats as “file format wars” (Kronschnabl and Rawlings 2004: 37). This ‘battle’ between the formats relates to the fact that the three main contestants in the ‘war’ aim to control media formats, so that the proprietary format to their respective player (*ram, *wmv, and *mov respectively) is the main format for video playback on the web. The great majority of audio and video clips on the BBC site (<http://www.bbc.co.uk/>) are streamed using *RealPlayer* and due to *Windows Media Player*’s incompatibility with the *RealPlayer* format (*ram), prosumers cannot use *Windows Media Player* to view most of the audio and video content stored on the BBC site (bbc.co.uk n.d.c). The competition between the players extends to other areas, especially live streaming sports and music events, where great amounts of money can be made via subscription fees paid by consumers. For example, *RealNetworks* have in the past paid \$20 million for exclusivity rights for their format to be used for broadcasting subscription-based baseball games (Hu 2001) and have even sued a company for not providing content in their RealMedia format (Hu 2004).

Controlling the format is hugely important, especially for the two main rivals - Microsoft and RealNetworks - in a battle reminiscent to that of the video players Betamax vs. VHS in the 80s (Kronschnabl and Rawlings 2004: 37). This is because the market for streaming video is ever increasing and money can be made on controlling content such as subscriptions to exclusive live music and sports events, but also in providing access to tied-in ‘digital malls’. These malls may include partner companies’ online music and video stores such as ‘Napster’, which are accessible from within *Windows Media Player*. Both *RealPlayer* and *QuickTime*, on the other hand, have their own built-in music store through which they sell the music that users listen to on their player (*RealPlayer* music store⁶⁵ and Apple’s iTunes respectively).

Overall, each company has a stake for their own player to be used exclusively as this gives them direct access to consumers with regard to subscriptions, advertising, selling music, videos etc. Kronschnabl and Rawlings state that for example RealNetworks received \$46.9 million in revenue from the quarter ended March 31st

⁶⁵ This is currently only available for US consumers.

2003, purely in sales in online media (Ibid: 38). In the light of the increasing popularity and uptake of high-speed Internet connection, it is clear to see why the control of media delivery over the Internet is of central importance to all three main players. Delivery and broadcasting of feature films over the Internet is a huge potential market that is guaranteed to come to the forefront of Internet usage over the next few years.

Webfilmmakers, then, need to be aware of these 'file format wars' since, depending on the format their film is encoded in, it will not be playable by certain players and thus only reach a limited number of the Internet audience. In the absence of a standard format supported by all three main players, it is common practice however to encode a webfilm in at least two formats. Most streaming video sites also offer a selection from at least two players. AtomFilms, one of the major portals for online entertainment in the form of webfilms, mostly offers a choice of either *RealPlayer* or *Windows Media Player*, with only few films available in the *QuickTime* format (AtomFilms n.d.d.). Typically, however, prosumers have to have all three players in order to be able to view most Internet video content. This is because the most widespread media player, *Windows Media Player*, does not support *any* of the key rival formats (most notably *.mov and *.ram). Thus, while *Windows Media Player* is the most popular player, it is also the player putting the most serious limit onto the content that can be viewed with it. This has resulted in a fragmented media player market, with no common standard that all three players support. Ironically, *Windows Media Player* dominates the market, while simultaneously limiting the choice of films that can be viewed using it, thus necessitating the installation of its rivals. While this Microsoft strategy is aiming to squeeze the other players out of the market, it remains to be seen whether Microsoft's insistence on ignoring all major rival formats will pay off long-term. Either it can result in its own formats becoming more and more the quasi standard for digital video on the web, or, alternatively, it might work to Microsoft's disadvantage and ultimately result in its losing of the 'war'. The latter certainly is a possibility, especially, since its key rival *RealPlayer* already supports *all* its main rival formats (*.mov, *.wmv, and the common standard MPEG-4), thus ultimately obliterating the need for *Windows Media Player*.

Presently, *Windows Media Player*'s main advantage over its two main rivals is its ubiquity. The reason for *Windows Media Player*'s apparent dominance is that it comes bundled with the Windows operating system. Since Windows operating systems command 90% of the market share, 90% of all new computers have *Windows Media Player* by default (Wikipedia n.d.d). This does not necessarily mean that all those prosumers prefer *Windows Media Player*. It does however mean that the *default* and preinstalled application for digital video on a Windows PC is Microsoft's product. This includes cross-platform compatible formats such as *.avi and *.mpg which use the default player as specified by the local machine which is, in the great majority of cases, *Windows Media Player*. Averagely literate PC users are likely only to notice the existence of rival players when they are unable to view a film that uses a non-Windows standard format.

The following table provides an overview over the latest versions (in February 2005) of the three main media players:

Feature	<i>Windows Media Player 10 (2004)</i>	<i>QuickTime Player 6.5.2 (2004)</i>	<i>RealPlayer 10.5 (2004)</i>
Operating System support	Windows XP only ⁶⁶	Mac OS X v10.2.8-10.3.x; Windows 98/Me/2000/XP	Windows 98/Me/NT/2000/XP ⁶⁷
Browser Compatibility	Internet Explorer 6 (SP2 recommended) or Netscape 7.1	Safari 1.0 or later; America Online 3 or later; Microsoft Internet Explorer 3.x or later;	Internet Explorer 5.0 or later

⁶⁶ *Windows Media Player 9* (2003) however does support Macintosh OS X.

⁶⁷ Separate versions with far fewer features are available for Mac OS X and Linux.

		Netscape Navigator 3.x or later	
Live Streaming Audio/Video support	Yes	Yes	Yes
Stored Streaming Audio/Video Support	Yes	Yes	Yes
Scalable Video Viewing Window	Fully scalable – can be resized to any window size for optimal placement	Half, normal, double size. Lack of full screen support in QuickTime Basic ⁶⁸	Fully scalable – can be resized to any window size for optimal placement
Format Proprietary to Player	.wma .wmv	.qt .mov	.ram .ra
File Formats Supported	<i>Windows Media Formats:</i> .asf, .wma, .wmv, .wm <i>Windows Media metafiles:</i> .asx, .wax, .wvx, .wmx, .wpl <i>Microsoft Digital Video: Recording</i> .dvr-ms <i>Windows Media</i>	<i>Video formats:</i> MOV , AVI, DV, Motion JPEG, MPEG-1, MPEG-2, MPEG-4 , 3GPP <i>Audio formats:</i> AIFF/AIFC, Audio CD, MP3, Sound Designer II, System 7 Sound, uLaw (AU), WAV, MPEG-	.mp3, .mp4 , .mov , .jpeg, .jpg, .gif, .tiff, .avi, 3GPP, .aiff, .au, FLASH , .midi, MPEG-4 , MPEG-4 audio, .pict, .psd, .wav, .wpl, .wmv , .avi, .asf, .wma, .wm, .ram , .rmm, .ra , .rax, .rv., .rvx, .rm, .rmx, .rmj, .rms, .m4a, .rp,

⁶⁸ These features are available in the retail version *QuickTime Pro*.

	<p><i>Download: Package</i></p> <p><i>.wmd</i></p> <p><i>Audio Visual</i></p> <p><i>Interleave: .avi</i></p> <p><i>Moving Pictures</i></p> <p><i>Experts Group:</i></p> <p><i>.mpg, .mpeg, .m1v,</i></p> <p><i>.mp2, .mp3, .mpa,</i></p> <p><i>.mpe, .mpv2, .m3u</i></p> <p><i>Musical Instrument</i></p> <p><i>Digital Interface:</i></p> <p><i>.mid, .midi, .rmi</i></p> <p><i>Audio Interchange</i></p> <p><i>File Format: .aif,</i></p> <p><i>.aifc, .aiff</i></p> <p><i>Sun Microsystems</i></p> <p><i>and NeXT: .au, .snd</i></p> <p><i>Audio for Windows:</i></p> <p><i>.wav</i></p> <p><i>CD Audio Track:</i></p> <p><i>.cda</i></p> <p><i>Indeo Video</i></p> <p><i>Technology: .ivf</i></p> <p><i>Windows Media</i></p> <p><i>Player Skins: .wmz,</i></p> <p><i>.wms</i></p> <p><i>QuickTime Content:</i></p> <p><i>.mov, .qt</i></p> <p>File types not supported:</p> <p><i>RealNetworks</i></p>	<p>4</p> <p><i>Still-image formats:</i></p> <p>BMP, GIF,</p> <p>JPEG/JFIF,</p> <p>MacPaint, PICT,</p> <p>PNG, Photoshop</p> <p>(with layers), SGI,</p> <p>Targa, FlashPix,</p> <p>TIFF</p> <p><i>Animation formats:</i></p> <p>3DMF, Animated</p> <p>GIF, FLC/FLI,</p> <p>Flash, PICS</p> <p><i>Other formats:</i> KAR</p> <p>(Karaoke), MIDI,</p> <p>QuickDraw GX,</p> <p>QuickTime Image</p> <p>File, Text</p>	<p>.rt, .rjs, .rmp</p>
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	<i>Content:</i> .ra, .rm, .ram <i>QuickTime Content:</i> .avi, .mov, .qt <i>Other:</i> .mp4		
Cost	Free	Free ⁶⁹	Free ⁷⁰

Table 1: Overview over the three main media players and their operating system and browser compatibility, as well as comparison of their respective file format support, proprietary formats, scalability, and cost.

All three media players, in their basic version, are free of charge. Whereas *Windows Media Player* comes bundled with the Windows operating system and is thus preinstalled, both *RealPlayer* and *QuickTime Player* have to be downloaded first. In the ‘war’ of media players, the Microsoft product thus has a clear advantage over its rivals. Other areas of importance include operating system support, file formats supported, and scalability of the players’ video window’s size. The two key features are that of the respective media players’ operating system support and the media formats supported (see table). Regarding the operating system, the table shows that *Windows Media Player 10* exclusively supports Windows’ latest operating system, Windows XP. That is, Microsoft’s latest player is not downward compatible, nor does it exist for the Macintosh operating system. This decision by Microsoft not only points to their confidence in Windows XP but also is in accord with other, non-Microsoft software’s strategy such as the aforementioned Adobe *Premiere Pro*. Given that the market share of XP is around 59.8% at the time of writing (end of 2004), Microsoft’s decision against downward compatibility is risky but potentially rewarding, since it encourages users of previous versions of Windows to upgrade their operating system, thus cementing and extending Microsoft’s domination of the PC market. The latest version of *RealPlayer*, similar to *Windows Media Player*, does not support Mac OS. However, *RealPlayer 10.5* is significantly more compatible with various earlier versions of Windows (backwards compatible up to Windows

⁶⁹ The professional version, *QuickTime Pro* with enhanced features including media authoring and play back of high-quality audio and video in full screen retails at £25.

⁷⁰ The advanced version, *RealPlayer Plus*, which includes the features advanced video controls, online radio, advanced CD burning, and crossfade retails at £29.99.

98), thus enabling Real to push their product to reach potentially the majority of the current Windows market share (around 90%). However, Microsoft's strategy to bundle their player with the Windows operating system has greatly impeded any such attempt by RealNetworks.

In general, webfilmmakers need to take into account the respective players' business strategies with regard to market domination, which is intrinsically linked to a technological network of system requirements, in particular, operating system, as well as the media formats each player will play. An awareness of these issues is vital for webfilmmakers in order to reach as wide an audience as possible. Knowledge of the issues surrounding media player dominance and format wars are furthermore crucial in the context of political intervention, especially with regard to Microsoft's dominance of the PC market. That is, webfilmmakers can choose to encode their film in a format that is unplayable by *Windows Media Player*, for example, in the more democratic open standard format MPEG-4 (the 'video equivalent' of mp3) which is supported by most other players but not by *Windows Media Player*.

Alongside these critical issues of operating system and file format support, the scalability of the three main media players is central to webfilm prosumption. Scalability refers to the ability to scale the window of the player to various different sizes. Prosumers might want to view a webfilm in full screen size, or they might want it covering only a small proportion of the screen. Here, both *Windows Media Player 10* and *RealPlayer 10.5* have a clear advantage over *QuickTime Player 6.5.2*. This is because the former two are fully scalable and can be resized to any window size for optimal placement, while *QuickTime Player* in its free version only has three options: half, normal, and double size, and can only be scaled to full screen in the professional version (*QuickTime Pro*) which has to be purchased separately. Scalability mainly affects webfilms that can be downloaded or played locally, or, those films that are non-embedded and displayed in a pop-up window. Streaming video sites (such as AtomFilms, or news clips on the BBC site) tend to screen films in a fixed-size window.

Overall, the table illustrates how various features influence webfilm production and consumption and show how it is embedded in a wider network of file format wars, the result of which is uncertain at the time of writing. Webfilmmakers need to be

aware of these issues and the impact the choice of format has on their webfilm's potential audience. The popularity and market share of each player is in constant flux. In recent years, Microsoft has eclipsed RealNetworks' early dominance of the media player market, arguably because of Microsoft's illegal business strategy of bundling. This strategy has been contested by its main competitor, RealNetworks, and their *RealPlayer*. The following table illustrates the tendency in development of the market share in media players from 1999-2004:

Market share	Windows Media Player	QuickTime Player	RealPlayer
1999	30%	N/A ⁷¹	85% (McWilliams 1999)
2000	57%	N/A	73% (News.com Staff 2000)
2001 (at work)	25%	14%	41% (Olsen 2002)
2002 (at work)	28.32%	13.19%	26.99% MacMinute.com (2002)
2003	N/A	N/A	N/A
2004 (a)	38.2%	36.8%	24.9% (ZDNet Research 2004)
2004 (b)	34.2%	9.4%	20.2% (Lohr 2004)

Table 2: Market shares of the three main media players 1999-2004.

The table illustrates only a tendency and no absolute values, since the statistics concerning the market share of various players are from different sources. In general, market share is difficult to track due to different methodologies used by various

⁷¹ No data available.

Internet statistic firms. Furthermore, many prosumers use more than one player, resulting in some statistics not totalling 100. One of the major Internet statistics firms, Nielsen/NetRatings, had to recount their media player usage statistics in 2002 after Apple criticised their methodology (Olsen 2002). Overall, the statistics in this table serve to illustrate the change in market share in media players as a tendency, but cannot offer conclusive and accurate statistics due to different counting methodologies, which make a direct comparison impossible. This flaw in web statistics also results in often differing accounts that are used in Internet marketing. For example, in the table, the first line of statistics for 2004 was cited by Frank Casanova who, as senior director of Apple Computer *QuickTime* product marketing, has an interest in statistics that indicate the popularity of *QuickTime* in second place to *Windows Media Player* (ZDNet Research 2004).

Despite these difficulties in directly comparing market share in media players, however, the table illustrates a clear development of market share especially when comparing *Windows Media Player* and *RealPlayer*. It shows a clear and steady increase in the *Windows Media Player* share and a decrease of RealNetworks product in the last 5 years (1999-2004). Interestingly, the increase of *Windows Media Player* and the decrease in *RealPlayer*'s market share began in 1999 onwards, when Microsoft first started bundling their player with the Windows operating system. It is in this light that the rivalry between RealNetworks and Microsoft and a recent court case against Microsoft's anti-competitive business practice is to be considered. RealNetworks filed a lawsuit against Microsoft in December 2003. The company accused Microsoft of unfairly monopolising the market for digital music and video, by bundling its media player with the operating system, thus illegally exploiting their existing monopoly in operating systems (Fried and Kawamoto 2004). It was argued that the market share of *Windows Media Player* jumped after it was bundled with the Windows operating system in 1999. It was subsequently ruled that the bundling was anti-competitive since it damaged rival players' businesses (Krim 2004). The case was reminiscent of the 'browser war' of the mid-1990s, when, using a similar 'bundling' strategy, Microsoft's *Internet Explorer* successfully managed to push Netscape's Internet browser (*Communicator*) out of the market despite Netscape's

market share of 84% (in 1996) (Hansen, Hu, and Yamamoto 2000). In March 2004, the European Commission ruled that Microsoft used its monopoly to try to manipulate the market for media players and was ordered to offer a version of Windows without its bundled media player. Microsoft was also fined €497.2 million (£331 million) for abusing its market power in the EU. In June 2004, the judgement was initially suspended while Microsoft's appeal went forward (McCullagh 2004). However, in December 2004, the March ruling was upheld and Microsoft now has to offer a version of its Windows operating system without *Windows Media Player*, as well as share technical details with rivals, thus improving the compatibility and interoperability of its operating system with Microsoft's competitors (Fried and Kawamoto 2004).

The outcome of the Microsoft lawsuit has major implications with regard to Microsoft's business practice, which are too complex to discuss further in this thesis. However, it illustrates the importance and influence of various corporations concerning viewing digital video over the Internet and the huge economic stakes in the media delivery market. The case is highly relevant to webfilmmakers since it illustrates how production and consumption of digital video for the web is tied intrinsically to and dependent upon the players used for viewing media content. Webfilmmakers thus have to be aware of the impact that the choice of format has on delivery and consumption of their film and ultimately, its playability and longevity.

There are alternatives to the file format wars, both in the form of media format and in its delivery, i.e. in media players. The most plausible way to overcome the incompatibility of various formats and the fragmentation of the media player market is the adoption of a common standard. This common standard could be an open format supported by all players, similar to the format of MP3 for audio files which is recognized by virtually all media players and which has become far more popular and widely used than proprietary formats such as *wma (windows media audio). The second option to end the file format wars is for all existing media players to support all formats, including those of their rivals. This would eliminate the need for prosumers having to install all three players and would make all digital video content instantly accessible, without the need to install the 'correct' player first.

A common standard in the shape of an open format already exists in the form of MPEG-4 (MP4). MPEG-4 was defined by the Moving Picture Experts Group (MPEG) in 1998. The Moving Picture Experts Group consists of hundreds of researchers from various companies who work together on open standards such as the widely used MPEG-1, MPEG-2, and MPEG-3 (MP3).⁷² The aim of the MPEG-4 standard is to streamline digital video delivery over the Internet, thus combating the proprietary digital video standards developed by various players. Instead of exclusion, MPEG-4 is characterised by interoperability through a shared standard, not only for video delivered over the Internet but also other platforms such as satellite television and wireless devices. The goal is to have a format that makes it easy to develop multimedia content across platforms and which can be played by all players and platforms, similar to the success of MP3 for digital audio. Since MPEG-4 is an open industry standard and not proprietary, anyone can create an MPEG-4 player or encoder, thus opening up the media player market instead of trying to create a monopoly through proprietary formats. There are a number of advantages to a common standard such as MPEG-4 over proprietary formats. First, a common standard eliminates the need to encode source material (such as a digital short film, a webcast, a live streaming event) into more than one format, thus saving time and money for both media companies and content providers by saving hosting and storage space. Secondly, a single format opens up the market for media players by enabling all playback devices to play back all media content, thus reaching a greater audience across maximum platforms and via multiple players. Lastly, since the common standard is developed by a group of researchers from different companies rather than by one company, such a format is more protected from unpredictable market forces. This helps to safeguard multimedia content for the future. While other formats' popularity depends on factors outside the direct control of the companies,⁷³ an open standard supported by all players is potentially more stable through its universal use and interoperability. Furthermore, any future developments of the

⁷² For more information, see the MPEG Industry Forum (2005).

⁷³ The aforementioned demise of the initially dominant *Netscape* browser is a case in point. The current decrease in popularity of the Real format is similarly relevant to the argument.

MPEG standard by the same group will most likely be backward compatible,⁷⁴ thus protecting media content from becoming unplayable in the future.

The problem with the open standard MPEG-4 format is that at the time of writing (2004), the player with the biggest market share does not play MPEG-4. While competitors such as RealNetworks and Apple Computer support the open standard digital media format, Microsoft has chosen to stick with its own proprietary technology (*wmv) that, as argued elsewhere in this thesis, the company pushes via its dominance in the desktop operating system (OS) market. Microsoft's business strategy based on exclusion means that the latest version of *Windows Media Player* and thus the player with currently the biggest market share does not support MPEG-4. Its argument for refusing to support MPEG-4 is that its own proprietary video compression technology is superior to the open standard. In the light of Microsoft's business strategy, it seems the real reason for Microsoft's refusal is not so much technology but instead its own economic motives as discussed earlier (Apple Computer Inc. 2005a; Broadcastpapers Pty Ltd 2002; Viewpoint 2001).

Overall, MPEG-4 potentially holds a great promise for the digital media market, especially concerning the delivery of video over the Internet. It remains to be seen how Microsoft's strategy will develop with regard to MPEG-4. A similar 'turn' on the side of Microsoft happened in relation to MP3. While their product has always played MP3 files, it was not until the latest version of *Windows Media Player* (*Windows Media Player 10*) that it had become possible to encode files into MP3 – a feature that has long been supported as standard by its rivals. That is, in the area of audio Microsoft had similarly adopted the strategy of pushing their own Windows Media format over that of rivals, including the hugely popular MP3 format, until very recently (Thurrott 2004). Consequently, the more popular MPEG-4 becomes and the more widespread it is used, the more likely that Microsoft has no choice but change their strategy and adopt MPEG-4. With the court case lost and their business practice of bundling deemed illegal, it is more conceivable that Microsoft will have to rethink its business strategy concerning its media player.

⁷⁴ MPEG-4 is backward compatible to MPEG-1 and MPEG-2.

The second alternative to the file format wars is for all players to support all formats, or alternatively, to develop a player that does support all major formats, thus eliminating the need to download all three main players. One of the competitors in the file format wars already supports all major formats – *RealPlayer 10.5* plays *.mov, *.wmv, and even MPEG-4 files. However, *RealPlayer* is notorious for difficulties installing its free version, which is reported in many online communities and happened to the author when trying to install it (she was directed to the paid version with no obvious link to the free version) (RealNetworks 2005). Furthermore, the product itself suffers occasionally from poor performance (it responds sluggishly when being started up), despite the player's overall excellent audio and video quality. Another aspect of criticism directed at *RealPlayer* especially from more knowledgeable prosumers and alternative online communities is that the product is 'bloatware', which is defined as:

pejorative though descriptive term for software that hogs RAM and disk space because of seldom-used "features" and poor implementation, usually running more slowly and awkwardly than earlier versions. The information industry tolerates and even encourages the bloatware phenomenon because victims of bloatware upgrades tend to buy newer and more powerful computers so that their new versions will run almost as fast as the old ones did.

(Stenzel 1997: Entry 'Bloatware')

RealPlayer tends to hog system resources and is full with advertising, including adware. Furthermore, since providing an email address to register its free version, the author has been receiving numerous spam and advertising emails to the account the player was registered with. Overall, while it is positive that the Real product supports all major formats and has an impressive audio and video quality, it is not considered here a real alternative. Consequently, *RealPlayer* is not the solution to the file format wars.⁷⁵

⁷⁵ For an extensive, well-researched piece of criticism of RealPlayer see Jogin.com (2004).

While none of the three major players is the answer to the file format wars, there is an alternative that, given the installation of the correct codecs, is able to play all formats. This player is *Media Player Classic*. *Media Player Classic* is an enhanced version of *Windows Media Player 6.4* but instead of being owned by Microsoft, it is open source and released under the GNU General Public License (GNU GPL). The GNU GPL (or just ‘GPL’) is based on an idea of software freedom and open source where users are allowed and even encouraged to access source code, study and modify a program, improve it, and even release improved versions to the public. The GPL is protected by a legal mechanism called ‘copyleft’, which was invented by Richard Stallman. Copyleft ensures that derivative works of GPL-licensed programs, such as software improvements, are also licensed under GPL and thus stay free and open (Kronsnabl and Rawlings 2004: 51ff; Wikipedia n.d.e). Open source software is directly opposed to proprietary software such as the three main media players where an individual or a company holds the exclusive copyright to the software. In proprietary software, it is illegal for end-users to study, improve, modify or copy and distribute it. The best-known piece of open source software with a GNU GPL is the alternative operating system Linux. Linux is a ‘flagship’ for the open source movement since it is characterised by stability and security, properties which proponents of the open software movement claim are characteristic of the superiority of open source development methodology (Free Software Foundation Inc. 1991; Wikipedia n.d.f; Wikipedia n.d.g; Wikipedia n.d.h).

Media Player Classic, then, is a real alternative to the proprietary software of *Windows Media Player*, *RealPlayer*, and *QuickTime Player*. It is a product of the open source movement and as such aligned with ideas of freedom and shared creation, against the proprietary stance driven by aggressive economic tactics as displayed by Microsoft, RealNetworks and Apple. There are a number of considerable advantages to *Media Player Classic*. First, the program is small and compact, easy to use, and uses few system resources. It is free from any ‘additional features’ that the proprietary media players have in common, such as advertising, music stores, shopping malls, and other intrusive add-ons that are characteristic of bloatware. *Media Player Classic* is compatible from Windows 95 upwards and its

viewing window is fully scalable. Since it looks like *Windows Media Player 6.4*, its interface is familiar to many users and easy to operate. The main problem with *Media Player Classic* lies in the scarcity of information regarding the product and its correct installation. For example, a number of additional codecs need to be installed in order to make the player fully compatible with all formats and thus to become a real multi-format player.⁷⁶ The key problem with *Media Player Classic* is that the program alone is not able to play Real and QuickTime formats. Briefly, what is required is the installation of additional codecs to enable the player to support all rival formats. The easiest option is to install the *K-Lite Mega Codec Pack*, which not only contains a great number of codecs (including ‘RealAlternative’ and ‘QuickTime Alternative’) but also the *Media Player Classic* software itself. This codec pack turns *Media Player Classic* into a true, high-performance multi-format alternative to the three main media players and eliminates the need for any of the rival players.

Overall, while *Media Player Classic* is by the author considered the presently best solution to the file format wars, it currently is known to and used by primarily very knowledgeable users and prosumers, including people involved in or interested in the open source movement. This is because information on the player is not easily accessible and is often rather technical, thus excluding less knowledgeable users who will find it easier to use their preinstalled *Windows Media Player*.

In the battle of media formats, the quality of the various formats and their influence on delivery of video and film over the Internet is of crucial importance. Microsoft have argued that their own proprietary formats (*wma and *wmv) produce the best quality for digital media and cite this as their reason not to support any of the supposedly inferior formats. However, the relationship between media format and original digital video (in this case, a webfilm) is not unidirectional or simply causal as Microsoft’s argument would suggest. In the case of webfilm or any other form of digital media delivered over the Internet, producers can control the quality of the end

⁷⁶ It took the author around 2 to 3 hours to gather the necessary information and it took a few attempts for her to successfully install *Media Player Classic*. The product also had to be extensively tested to make sure it was working as a true multi-format player, thus eliminating the need for all 3 major media players.

product only to a certain degree. This is because webfilm quality is not only dependent upon the process of how it is encoded and thus its format, but also on the amount of bandwidth required for it to be viewed properly, as well as consumers' own set-up. Webfilmmakers can encode and compress their film so that it can be viewed with a 56K modem, thus potentially reaching as wide an audience as possible (i.e. from a 56K dial-up modem upwards). In this case, the format by RealNetworks is a good choice for providing the best quality result. Real formats have an advanced low bandwidth codec and the company has extensive experience with Internet media delivery for slow dial-up connections, since they dominated the market when the great majority of Internet connections relied on slow dial-up modems.⁷⁷ However, encoding a webfilm with a target audience of 56K users would still result in a sacrifice in quality: a high degree of compression applied to both audio and video would eliminate portions of the audio and video data, resulting in a less clear and possibly more pixelated viewing experience. Generally, it is common practice to encode a film in more than one version, optimised both for different speeds and for different media players. On AtomFilms, for example, webfilms exist in 4 different versions and users can select their connection speed with a choice from 28.8K, 56K, 100K, and 300K (recommended).

Overall, the quality and viewing experience of webfilms is much more complex than simply a matter of choosing the right media format. Webfilmmaker have to consider not only different media formats but also different connection speeds and they have to make a choice with regard to the target audience, that is, for whom they want to optimise their film. In a fragmented media player market and considering the great variety in Internet connection speeds, the best solution is to encode a film in a number of different versions relating both to transmission speeds and to different media players.

The difficulty controlling the quality and viewing experience of webfilms on the side of producers supports the argument that a webfilm producer simultaneously has to fill the role of its consumer. This is because s/he not only has to take into consideration consumers' potential system set-up (media players installed,

⁷⁷ This is why *RealPlayer* was the first choice for media playback on the BBC site – the BBC web presence has been providing video and audio content since 1998.

bandwidth) but also s/he has to test and view her or his film in many different settings to retain an idea of what film consumers will be watching. This also indicates that consumers themselves are always partly producers of a film, since it is their set-up that ultimately determines which version of a film they are going to watch. Overall, the process of webfilm production is linked inextricably to that of its consumption. Unlike in traditional broadcasting, where all consumers will broadly view the same film at the same time,⁷⁸ in webfilm consumption many users will view very different films, for example, differing in size, resolution, and with considerable difference in quality.

To conclude, there is no clear-cut recommendation with regard to media formats for the best result in webfilm quality. Instead, webfilm prosumers have to be aware of the various networks in which webfilm consumption takes place and create a film with not only multiple formats, but also multiple Internet connection speeds in mind. The latter aspect will be discussed in depth in chapter 4.4.

We have seen that the issue of media formats is one of the key aspects of webfilm prosumption and one of which webfilmmakers need to be aware. More than any other aspect, the choice of format has a serious impact on a webfilm's reach, reception, and audience and it is also potentially a way in which webfilmmakers can make an intervention to Microsoft's dominance of the market. At the time of writing (2004), the media player market is dominated by three major players, all of which are products that, while technically superior, also exploit their position economically by turning a simple media player product into a multi-functional advertising and consumption machine with the aim of commercially binding as many users to their product as possible. The three major players, *Windows Media Player*, *RealPlayer*, and *QuickTime Player* are bloatware that aggressively targets consumers, cluttering up PC systems and slowing down performance, ultimately encouraging users to upgrade their PCs while continually pestering them to upgrade the freeware version of their product to the paid version (a strategy used by *RealPlayer* and *QuickTime*

⁷⁸ With the advent of digital television and the popularity of 'home cinema' entertainment, resulting in a great variation of screen size and resolution (16:9 vs. 4:3), this is rapidly changing. Examining this 'heterogeneous viewing experience' is beyond the scope of this thesis.

Player). An alternative in the form of a shared format (MPEG-4) is boycotted by Microsoft, the company with an anti-competitive and aggressive business strategy intent on pushing its rivals and their rival formats out of the market. The other alternative in the shape of a multi-format media player exists with *Media Player Classic*. Unfortunately, *Media Player Classic* is only a true alternative for prosumers and sufficiently knowledgeable users, since information on the player and its correct installation is scarce, and the installation does involve some manual tweaking. The quality of the various media formats has to be considered in this wider context of economic wars of dominance in the digital media market. That is, the choice of format cannot be considered independent of the file format wars, and webfilmmakers have to take into consideration this ongoing battle and the impact it has on the potential audience of their film. Alongside the media formats battle, webfilmmakers also have to take into account aspects of bandwidth and end consumers' PC set-up. Overall, the quality and viewing experience of webfilms is much more complex than simply a matter of choosing the right media format, and only partially controllable by webfilm producers. The area of media formats is thus a complex and intricate issue not only with economic implications but also with a multitude of competing formats, players, differing bandwidth, and individual PC set-ups, where the quality of the end product in the form of webfilm cannot be considered outside these networks.

4.4. Technological Agents: Webfilm Transmission

4.4.1. Download versus Streaming

Broadly speaking, there are two options when it comes to watching films on the Internet: either download it first (HTTP streaming), or stream it in "real time" and watch it play as it is sent to your computer (RTSP streaming). The 'download first, watch later' version is the easiest to set up and thus has traditionally been very popular, especially, in the first phase of Internet films. Long download times did not deter users from downloading and watching films with adult content, which were the first popular genre at the beginning of live action films on the Internet (Boyd-Graber 2001: 18). For individual webfilmmakers, this traditional method of adding video to

a website is still the most sensible, cheapest, and most straightforward option for broadcasting their film on the WWW.

The terminology surrounding downloading a film from the net before viewing it is diverse and confusing. The downloading method is technically a non-streaming method, since a film has to be downloaded either fully or partially before viewing can commence. However, due to developments in media players' capabilities, most players in fact start playing a film as it is being downloaded. In practice, this 'streaming' is not instant but usually a short time elapses before a player has enough data to start playing a film. Technically, however, this is still a download and the film is not 'streamed' in the sense of the RTP/RTSP-based delivery method discussed further down. Some use the term 'HTTP streaming' as an umbrella term for download and progressive download since both are transmitted via a HTTP protocol and a progressive download visually resembles 'streaming'.

A film transmitted via HTTP streaming either has to be fully downloaded before it starts playing ('download') or it starts playing while it is still downloading ('progressive download'). The visual appearance of a progressive download resembles real streaming, hence the term 'HTTP streaming' is often used to denote any video transmission method via HTTP. The main difference to true (RTP/RTSP-based) streaming is that in HTTP streaming, a complete film is downloaded from a server to a user's hard drive. In a traditional download, a film has to be saved in its entirety to a user's PC before s/he can start watching it. In a progressive download, viewing starts after a short period of waiting while initial packets are being transmitted. Lost packets are retransmitted until they are received, and no information is lost. This is because the file being sent (image quality and frame rate) belongs to a predetermined and 'finished' version of the film. Unlike in RTSP streaming, where a user with slow connection speed will be sent a more compressed and thus lower quality version of a film, in HTTP streaming, any film is consistently high quality and the same for any user watching it, independent of connection speed.

There are a number of other advantages to transmitting a webfilm using HTTP streaming. Since HTTP streaming uses the same protocol as web pages for the delivery of its content, there are less likely to be compatibility problems such as with firewalls and other software. Such films are part of an ordinary web page and no

special type of hosting is required - most host servers recognise standard media formats. Furthermore, it is very easy and cheap to publish a webfilm via HTTP since only basic html knowledge is needed to upload a webfilm to a site. The main disadvantage of HTTP streaming relates to the issue of ownership of the finished work. Since a file can be downloaded locally to any user's PC, creators have no end control over distribution or modification of their film and it is harder to enforce copyright. Another disadvantage is that there is no intelligent communication between host server and PC. This means that it is not possible to detect automatically consumers' connection speed using HTTP and to send a file compressed accordingly. For a webfilmmaker, this means that s/he has to consider his or her target audience carefully. One possibility is to create different versions of a webfilm for different bandwidths (such as one version for ADSL and one version for 56K modem). Consumers can then manually select the appropriate version from the website, i.e. by clicking on a link. If there is only one version of a webfilm, it is good practice to optimise it for transmission via a 56K modem, in order to reach a maximum number of people. However, this will almost certainly result in a compromise of quality, as the amount of compression is likely to be high. The final disadvantage of HTTP streaming is that it is not possible to broadcast, multicast, or transmit live feeds using this method. This is because the HTTP method only works with complete files stored on a server. Overall, however, HTTP streaming is the quickest, easiest and cheapest way for webfilmmakers to transmit their films online, especially, since in the era of fast broadband connections many films can be viewed via progressive download. This means that one of the most negative aspects of downloading – having to wait for the entire file before viewing it – is minimised (Marioni 2001; Sorenson Media n.d.; Wavelength Media n.d.a).

In HTTP streaming, a film can be transmitted by embedding it into an existing webpage or it can open up separately in a standalone player. Both alternatives are easy to implement. In both cases, webfilmmakers first have to upload their film in an appropriate media format (for example *.wmv) to a web server. To exhibit a film in a standalone player all that is required is a simple hyperlink from a webpage to the video file on a server:

`Click here to view video`
(Wavelength Media n.d.b)

Upon clicking the link, a consumer's media player will open and begin to play the file. The alternative, embedding a film in an existing webpage, requires more HTML knowledge. Webfilmmakers in this case need to use special HTML tags to embed the film so that it plays from within the webpage when the site is being loaded:

```
<OBJECT ID="MediaPlayer" WIDTH="192" HEIGHT="190"
CLASSID="CLSID:22D6F312-B0F6-11D0-94AB-0080C74C7E95"
STANDBY="Loading Windows Media Player components..."
TYPE="application/x-oleobject">
<PARAM NAME="FileName" VALUE="videofilename.wmv">
<PARAM name="ShowControls" VALUE="true">
<param name="ShowStatusBar" value="false">
<PARAM name="ShowDisplay" VALUE="false">
<PARAM name="autostart" VALUE="false">
<EMBED TYPE="application/x-mplayer2"
SRC="videofilename.wmv" NAME="MediaPlayer"
WIDTH="192" HEIGHT="190" ShowControls="1"
ShowStatusBar="0" ShowDisplay="0" autostart="0"> </EMBED>
</OBJECT>
```

(Ibid)

There are various parameters that can be set when embedding films into a webpage. In the above example, the parameter 'ShowControls' determines if the player controls should show, thus giving users access to the controls (such as Stop, Play, Pause, etc.). The value "0" hides the controls, while the value "1" shows them. 'Autostart' is the parameter determining whether or not a film will start automatically ("0" for a non-autostart, and the value "1" for autostart).⁷⁹ These parameters are important in regard to a webfilm's consumption, since they partly prescribe the way in which a film is viewed. It is common practice to include controls so that consumers have a choice to stop, pause and rewind a film if required. On the other hand, the reception and meaning of a webfilm might change if a film autostarts and plays in a loop, without giving consumers any access to controls.⁸⁰ Overall, HTTP streaming is a very convenient way for webfilmmakers to transmit their film and is a quick and cost-effective starting point for webfilm exhibition.

⁷⁹ See Mioplanet Technologies (n.d.) for a list of parameters.

⁸⁰ One of my own early webfilms was a looped quicktime movie embedded into a webpage, without any access to controls.

HTTP streaming is mostly used for short films (a few seconds to a few minutes), movie trailers, and other short clips such as viral videos (short clips typically distributed via email but also available online). It is the best transmission method for short films on personal and home video websites and for short clips on corporate sites. Many bigger sites showing short films also use HTTP streaming, for example, iFilm and Cinematicfilm. The popular movie trailers on Apple's site (<http://www.apple.com/trailers/>) similarly use HTTP streaming.

Real-time streaming, on the other hand, is broadcast to a browser directly from a server. It uses the protocol RTSP (real time streaming protocol) which means that in order to transmit a film using true streaming, it needs to be stored on a special video streaming server. Unlike in HTTP streaming, in RTSP streaming a film is played as it is received. This means that any point in a film is instantly accessible – consumers do not have to wait for data to be downloaded first. Another advantage is that films themselves are never downloaded to consumers' hard drives – instead, they remain on their servers at all times. This helps protecting files from being copied and modified or distributed against their creator's will.⁸¹ Another advantage of true streaming is that a streaming server communicates with consumers' media players in a number of ways while sending films. It monitors consumers' connection speed in order to adapt the files being sent to each individual user's home PC. For example, if a PC's media player is connected to the web using a slow Internet connection, a server can send a highly compressed version of a film. If there is a faster connection such as DSL, a server can send a less compressed and therefore higher-quality version. Furthermore, if a connection slows down during transmission, a server can compensate for this by sending less information, adjust a film's compression, or drop some information (such as frames) in order to maintain consistent streaming and constant server connection. In addition, true streaming is the only transmission method for live feeds (such as the transmission of live football games or a Madonna concert) and the only method supporting broadcasts and multicasts. It can also handle much more traffic than an ordinary HTTP server. The major disadvantage of true streaming is the cost and work required in setting it up. Special server software is

⁸¹ It is possible to download streaming video to a harddrive using specialist software, such as *Cocsoft StreamDown*.

needed to allow for true streaming, and not all hosting companies support it. The alternative to purchasing server software is to buy a hosting package that specialises in streaming media (such as RealNetworks Managed Application Services (MAS) or Apple Quicktime Streaming Services). Another major disadvantage of live streaming is that for users with a slow Internet connection, the film streamed will be of considerably lower quality than for those with a faster connection. This means that webfilmmakers cannot control the quality of the film their audience is watching. The versions that are being transmitted can differ considerably in video and audio quality (DeskShare n.d.; Pure Motion Team 2004).

There are a number of settings where true streaming is the better or only option available to transmit video online. True streaming is particularly suited to longer broadcasts and movies, since such video files are not stored anywhere on a user's hard drive and so size restrictions do not apply. Instead, frames are discarded as soon as they are viewed. The fact that such files are not stored anywhere locally furthermore makes true streaming more attractive to larger corporations and commercial sites, where the issue of copyright is a concern when providing video on their site. Finally, true streaming is the only method that works for live broadcasts and webcasts, since streaming video, unlike HTTP streaming, can take its source from a live video camera. Thus, true streaming is used to transmit live sports events and concerts such as the pioneering live webcast of a Madonna concert in November 2000, which was watched worldwide by over 8 million web users (DeskShare n.d.).

Many big corporate websites use true streaming, particularly TV and media sites whose web presence complements and enhances their 'offline' experience. A well-known example is the BBC's web news channels (<http://news.bbc.co.uk>) which offers live webcasts of some news and additionally an archive containing VOD (video-on-demand) news material from TV. In a similar vein, the video news on the CNN website offer news webcasts and VOD reports from around the world (<http://edition.cnn.com/video/>). Another example is webfilm entertainment portal AtomFilms, where all webfilms shown are hosted on a true streaming server.

Overall, true streaming is the most sensible option for transmitting webfilms or Internet video in general on a bigger scale, and as such the primary choice for corporations and commercial sites. True streaming is furthermore the transmission

method for future developments such as Internet-only TV channels and online cinema feature films.

We have seen that there are two main methods for webfilm transmission. One is via HTTP streaming, which is cheap and easy to implement but has the disadvantage of less copyright protection for a film. The other transmission method is via RTSP, which is more expensive and complicated to set up and furthermore means that the quality of a webfilm might suffer depending on each viewer's Internet connection speed. Both methods influence the webfilmmaking process. If a webfilmmaker opts for HTTP streaming, s/he has to consider a number of factors in the preproduction of their webfilm. One option is to provide one film only and optimise it for web consumption, i.e. for viewing using a 56K modem. This has the advantage that only one version exists (and so everyone will see the same film) but the disadvantage is a greater compromise in quality, since the film will have to be more compressed. Alternatively, s/he can provide two versions: one for 56K modem and another one for a faster connection speed such as ADSL. This means that two versions of the same film exist with a difference in quality. A webfilmmaker also needs to consider whether to exhibit their film in a standalone player or embed it into a website. We have seen that embedding a film creates more options regarding its playback, which can be controlled by HTML tags. For example, it is possible to set parameters so that the film automatically starts to play when the page is loaded, to loop it, and not to include any controls. Here, viewers, similar to the experience in a cinema, have no options but watch the film or physically walk away (in the case of webfilms, close the browser window). The most common option however is to have a film autostart and loop, but to include a full set of controls. This set-up makes a webfilm resemble a video or a DVD in that the viewing experience can be controlled and interacted with by its consumers.

The second method of transmitting a webfilm is via RTSP streaming. If a webfilmmaker opts for true streaming, there are different issues that need consideration and that impact on a webfilm's preproduction. There will be a greater cost issue involved in setting up a true streaming server. The cheapest option is to purchase a hosted package from an ISP that includes or specialises in streaming

media. Other options such as buying or hiring a streaming server are only viable for bigger corporations or commercial sites with larger amounts of traffic. The true streaming method means that a webfilmmaker has more control over the copyright of his or her film, as it is more difficult to download it onto a viewer's PC since it remains on a server. However, true streaming carries a greater risk of reducing the quality of a film by sending more compressed files and there is furthermore a risk of losing information, such as dropping frames, if the Internet connection slows down or is slow to begin with. This means that it is impossible to control what film each consumer is watching, as a webfilmmaker cannot know each individual user's set-up and bandwidth, which determines the quality of the film they are watching.

Overall, true streaming is the option for more advanced Internet transmission, where either a great quantity of films are stored on a streaming server or a site has a high amount of traffic. HTTP streaming is the best option to get started, i.e. to transmit a small number of short films on a personal or bigger community site (such as an alternative webfilmsite). Both transmission methods have their advantages and disadvantages, and we have seen how both influence webfilms presumption and the quality of the films themselves in different ways.

4.4.2. Bandwidth

Bandwidth refers to the Internet connection speed of each individual user (for example 56K modem, ISDN, ADSL), and to the overall traffic of a network. Webfilm transmission depends not only on the delivery method chosen (HTTP versus RTSP streaming) but also on each individual user's connection speed and the overall traffic of the network. Webfilm viewing experience and consumption is influenced by bandwidth. The key difference between downloading and true streaming is the relationship each has with bandwidth and webfilm quality. In the case of true (RTSP) streaming, the quality of the film depends entirely on a user's bandwidth. In the case of HTTP streaming (downloading), the viewing quality is independent of bandwidth but is limited by time. If a user on a 56K modem decides to download a film that is 5MB in file size, it will take around 30 minutes for it to download. The quality of the film, however, will not be affected.

In HTTP streaming (download), the relationship between bandwidth and webfilm quality is only indirect and bandwidth cannot directly affect a film's quality. Instead, time is the more important factor. While a user on a 56K modem can still opt to download the highest-quality version of a webfilm that is intended for higher bandwidths such as ADSL, this will however increase the waiting time for the film to download considerably – 5MB take roughly 30 minutes on a 56K modem. Users can thus choose as high a quality as they like as long as they are willing to wait for the clip to be retrieved from the server first. Since bandwidth thus does not have a direct influence on a webfilm's quality, all users will watch the same film in the quality intended by a webfilmmaker, independent of their connection speed. If there are any problems in the network, such as a high amount of traffic, this will not affect a film's playback quality but it might affect the availability of a film on its server. For example, if a site owner's bandwidth limit is exceeded because too many requests for a film have been made, the server and thus the film might become unavailable ('Bandwidth Limit Exceeded'). Network traffic can furthermore influence the playback of a film in a progressive download. Net congestion, which can be caused by increased Internet traffic at peak times, may cause the playback of a HTTP streamed film to stop. It will resume once more data of the film becomes available again.

Overall, in HTTP streaming, bandwidth has no direct impact on webfilm consumption and lower bandwidth has no deteriorating effect on a webfilm's quality. However, low bandwidth increases the time a user will have to wait if s/he wants to view the best quality version of a webfilm, and furthermore, network traffic combined with low bandwidth means that the viewing of a film viewed may be interrupted (Adams n.d.; AtomFilms n.d.d; University of Georgia 2004).

In sharp contrast to HTTP streaming, bandwidth is the deciding factor in the quality of a webfilm delivered via true streaming. This is because, as previously explained, a streaming server communicates directly with a user's PC and sends data in accordance with users' bandwidth and technical set-up. This means that it is impossible to stream a higher-quality video than what a user's bandwidth will support. Furthermore, the impact of network traffic is different. With a streamed webfilm, network congestion will degrade the quality of a film since data is delivered

more slowly or less data is being sent (for example, frames are dropped). Unlike in HTTP streaming, transmission of a film delivered via RTSP streaming does not stop when the network becomes too congested. Instead, the quality of a film will deteriorate and streams can hiss, skip or drop frames, when the connection or network becomes too weak. Because the Internet is characterised by constrained and changing bandwidth conditions, the best viewing experience for streamed video can be achieved via high bandwidth such as ADSL. This minimises the problems experienced in the transmission of webfilms delivered via true streaming.

Overall, bandwidth is the most important factor in the quality of webfilms delivered via true streaming. Lower bandwidth and network traffic both have a deteriorating effect on a webfilm's quality. As a result, the film users are watching may not be of consistent quality and, depending on bandwidth and network problems, may stutter and drop frames. This ultimately means that the quality of the film that is being watched may differ considerably and cannot be controlled by a webfilmmaker, if s/he decides on the transmission method of true streaming.

Bandwidth is a key factor in the consumption of webfilms. However, it has a different role in the network depending on the transmission method used. In HTTP streaming (download), bandwidth has no direct influence on the quality of a film viewed. The only impact it has in this case is on time. That is, on a low bandwidth, it will take much longer to download a film than it does on a fast connection such as DSL. However, since the audio and video data is stored on a server as a finite version, films are always the same quality once downloaded, independent of users' bandwidth. Therefore, in the case of HTTP streaming, bandwidth has no direct effect on the quality of a film viewed and all users will watch the same film, independent of their connection speed. In RTSP streaming (true streaming), the opposite is the case. Bandwidth here is the key deciding factor in the quality of a film viewed. This is because in true streaming, a film is not stored as a finite entity but instead is streamed in accordance with a user's technical set-up and bandwidth. This means that each user's PC in effect co-produces the film that is being watched while it is streamed. Someone on a low bandwidth will watch a low-quality version of a film because their own bandwidth, in communication with a streaming server, *produces* a low-quality, highly compressed version.

The second aspect of bandwidth is the overall traffic on the Internet. In peak times (6am-6pm Monday to Friday) the network might be more congested, particularly for 56K modem users. In the case of HTTP streaming, this might cause a download to time out or to stop, without affecting the quality of a film (the download will resume once the network is less congested). In RTSP streaming, playback (and thus film) quality will decrease in a congested network, causing the dropping of frames or playback stuttering. Lastly, the amount of Internet traffic can affect the availability of a film provided via HTTP streaming. Since a film delivered via HTTP streaming is stored on a server as a discrete entity, a server might be unable to handle an increased amount of traffic, thus rejecting all requests to a site and therefore, to a film.

Overall, a webfilmmaker has to consider the implications of bandwidth in the production and consumption of their film. With regard to bandwidth, HTTP streaming is the safer option since it has no direct impact on the quality of a film viewed. In true streaming, on the other hand, precautions can be taken to ensure a smooth delivery and to minimise the deteriorating effect bandwidth can have on the quality of a film that is always co-produced by consumers. Sites such as AtomFilms that use streaming on a big scale provide a guide to minimising the negative impact of bandwidth (AtomFilms n.d.d). Each individual consumer, as a co-producer of a streamed webfilm needs to be educated to ensure a smooth quality of the webfilms viewed. This is the only way through which the agency of bandwidth can be controlled.

4.5. Webfilm Prosumption and New Media Discourse

The findings of the first case study critiqued the evolving new media discourse in a number of ways. In particular, they shed a new light on the different understandings of the relationship of technology and society within Media and Cultural Studies (see chapter 2.2). The results weakened the approach traditionally favoured by Cultural Studies that considers technology a response to human need, and that deploys an instrumental view of technology (for example Williams 1974). The case study illustrated that webfilms cannot be an instrument or a response to human need as they are not separate objects. Instead, webfilms were inextricable from the socio-

technical network they were embedded in, particularly, bandwidth, hardware, and software. The case study furthermore confirmed that the role of technology was not that of an instrument. Instead, this instrumental view was replaced by one of a dynamic relationship between humans and technologies where humans did not have full control or determined their use of technology in a unidirectional way. The first webfilm network illustrated instead that technology was far more complex and evolved only in ongoing negotiation with human agents. Human use of technology, when engaged in webfilm prosumption, was embedded in networks including aspects that were out of human control, such as slow bandwidth, inferior hardware, and software.

With regard to the claims of technological determinism, exemplified by ‘new media patron’ McLuhan, the first case study confirmed some aspects relating to the greater influence of technology. McLuhan’s argument for an increased materiality of all media was confirmed via the higher visibility of technological agents involved in webfilm prosumption, such as telephone cables, monitors, other hardware and peripherals. His classification of media into cool and hot media was also insightful. Since webfilm prosumption was characterised by a high degree of user interaction, new digital media can be classified as cool media. The WWW and knowledge of it is mosaic, not linear (‘a mosaic of information’). These higher degrees of user interaction inscribed by webfilm prosumption confirmed McLuhan’s view of the blurring of boundaries of media and ‘man’: viewers co-produce webfilms, thus influencing which version of webfilm they watch. That is, not only did media extend ‘man’, but also, ‘man’ extended and co-produced media – here, webfilms.

Finally, the first case study strongly confirmed ANT’s take on media and its more organic view of technology. Analysing webfilm prosumption showed that the separation of technology and society was indeed artificial and that the relationship between technology and society was instead mutually constitutive. Webfilms were found to be neither separate media objects nor firmly and exclusively in the social sphere. Instead, they were quasi-objects in that they were simultaneously material, real, and discursive. As quasi-objects, webfilms and their associated technological actors were mediators with the ability to act (cause effects), while prosumers were

quasi-subjects requiring sociotechnical competence in order to successfully (inter)act in the webfilm network. Overall, the first case study shed a new light on the formation of new media discourse. It refuted an instrumental view of technology and confirmed that technologies cannot be considered separate or be left out of an analysis of new media altogether. Instead, new media as academic discipline needs to come to a fresh understanding of technology, with a greater emphasis on its materiality and the interactions and interrelations between technology and society. The network of webfilm prosumption exemplified this relationship via the nuclear network of hardware and software and their human user. This mutually constitutive relationship, including its quasi-objects and quasi-subjects, is summed up in more detail below.

4.6. Summary

This first case study traced the network of hardware, software and humans, which provide the immediate context for webfilm production and consumption. The focus was deliberately on various technological actors to the exclusion of other, similarly important actors such as geography, government policies, and economical factors. The idea was to examine the nuclear relationship of prosumers and their computers – here, PCs, in order to trace the intricate ways in which each of the actors (including hardware, software in the form of media formats, and bandwidth) prescribes different actions along the network of webfilm production and consumption. During the four years of this research, some of these technological actors have decreased in importance due to new developments, in particular, concerning hardware and bandwidth. For example, in the UK, every new PC off the shelf is at the time of writing (2005) not only affordable but also sufficiently equipped for webfilm prosumption with regard to hard drive size, memory, and processor speed. Furthermore, broadband penetration rates in the UK surpassed dial-up connections for the first time in May 2005 and have now (August 2005) risen to 55.7% (PublicTechnology.net 2005). Therefore, low-quality moving image including webfilms and video such as BBC newscasts from 1998 and webisodes of *Snackboy* are largely outdated for the UK. Some of the outcomes of this first case study have thus already become historic; however, they are only historic with regard to their

localised context in a highly developed UK. Particularly with regard to broadband, the UK now has 99% coverage, with areas such as Northern Ireland and Yorkshire recently announcing 100% broadband coverage (Richardson 2006). The ubiquity of high-spec high-speed computers in the UK means that some of the technological actors described in this first case study are at risk of becoming invisible. It is here where actors such as geographical location and economic factors shed a different light on the network of webfilm, making visible not only technological actors once more but also stressing the continuation of inequality perpetuated by the Digital Divide in other Western European countries and across the world. For example, in the region of Abruzzo in Italy, where the author spent a few months during her research, broadband infrastructure is patchy and broadband availability stops 15 miles or so inland from the coast. High-speed Internet connections are mainly available in areas surrounding cities. 56K dial-up modems are highly unreliable and slow so that many Internet users in the countryside have reverted to GPRS connections, using a mobile phone network with a speed up to 56.7Kbps to connect to the Internet. Any other alternatives such as Satellite DSL are expensive and unaffordable for many, and a number of petitions have been started to convince Italian Telecom to connect countryside areas to high-speed Internet.⁸² Additionally, people in less wealthy areas in the countryside often cannot afford a high-spec new PC and therefore rely on cast-offs or cheap second-hand models which are sometimes not even connected to the Internet according to I. Michno (personal communication, January 20, 2006). The experience of the distribution of high-speed Internet and technologies in a non-UK country furthermore undermines Cultural Studies' theory that considers technology a mere instrument that does not warrant any separate analysis. Instead, it lends further support to the argument that technology is inextricably linked to the creation of power relationships and, as an agent, is able to exert power within the socio-technical network. For the specific context of webfilmmaking, this means that the nuclear relationship of hardware, software and prosumer is still highly relevant and its significance shifts and transforms depending on the influence of other actors such as geography and economical situation. Another important point in the nuclear network of webfilm prosumption was the cultural

⁸² One such flyer was picked up by the author in a bar in Capestrano in the province of L'Aquila, Abruzzo, in January 2006.

capital of human actors in the network and, related to that, factors pertaining to what DiMaggio and Hargittai (2001) refer to as Digital Inequality. That is, particularly in the first few years of webfilm production, inferior bandwidth and hardware coupled with compatibility issues with regard to hardware and software (such as video capture cards and video editing software) meant that webfilm production often required expert knowledge to counteract or adapt according to prescriptions of hardware, software, and bandwidth. This resulted in digital inequality insomuch that cultural production was intimately tied to computer knowledge.⁸³ Further discussion of the findings of this first case study is provided in chapter 7.1.

During the course of this research, the importance of expert knowledge with regard to webfilmmaking has arguably decreased. This is because hardware and software as well as bandwidth in the UK market has improved considerably, and it is now much easier for a layperson to create for example home videos using webcams or cheap digital video cameras, and editing them using the software *Windows Movie Maker* that now comes preinstalled with every copy of the Windows operating system. The great increase of video community sites and the phenomenon of videoblogging furthermore underline the democratisation of webfilmmaking and video on the Internet. Overall, the immediate nuclear context of webfilm prosumption in the UK has matured and short moving image on the Internet has become an everyday occurrence, with a steady increase in popularity (Good 2006). The area of interest for future research lies in longer moving image content on the Internet in the UK and worldwide. At the time of writing (the end of 2005), the continual increase and availability of broadband connection speed has not yet resulted in an increase of longer video content on the Internet. However, the first full-feature film to premier on the web was broadcast in September 2003, and in recent months, broadband TV service especially has received renewed attention. While ITV have announced a 3-month-trial for IPTV (Internet Protocol TV) (bbc.co.uk 2005a) and the BBC is similarly experimenting with broadband TV, other significant developments are BSkyB's purchase of Internet provider Easynet in October 2005, with the long-term

⁸³ This point is also discussed in chapter 6.2.2. in the context of a webfilm manifesto. The authors of the manifesto argue that filmmakers need to be friends with 'geeks', since a good level of technical knowledge is essential to webfilmmaking.

strategy to supply some of its programmes via the Internet (bbc.co.uk 2005b). These developments, coupled with a continuous increase in available broadband speeds⁸⁴ point to a decrease in technological prescriptions for the form of short film as a necessary and exclusive container for digital moving image broadcast over the Internet. It remains to be seen how the network of technological and human actors changes and is reshaped by longer forms of moving image, and the role and function of human prosumers within this network.

⁸⁴ 2MB is now the average broadband connection speed, with 8MB currently trialled by BT and new ADSL2+ services using LLU technology offering up to 24MB speed (MrSaffron 2005).

5. Webfilm Network 2: Actants of Webfilm Distribution and Exhibition

5.1. Introduction

The second case study examines some of the nodes in the network of webfilm distribution and exhibition. The area of distribution is where webfilms and new media in general most differ from traditional media. In the film industry, distribution is the “centre of power” (Bordwell and Thompson 2001: 10). Distribution companies such as Warner Bros., Paramount, Disney/Buena Vista, Columbia, Twentieth Century Fox, and Universal have economic power because they control what films are exhibited and they often get 70% of the first week’s ticket sales from the exhibitors, i.e. movie theatres. Furthermore, since they fund many of the films they then circulate, they exert an influence on the forms and genre of films. Distributors thus function as gatekeepers to the film industry (Ibid: 12). Behind this hierarchy lies a communication model common to traditional media such as cinema and TV. It is a ‘few-to-many’ model, characterised by few distributors and broadcasters and many, typically passive, consumers.⁸⁵ The Internet on the other hand is a less hierarchical communication platform with a many-to-many communication model, with many consumers and producers, and a convergence between the two functions (‘prosumers’).⁸⁶ This results in a decreased importance of distributors as ‘middlemen’ between consumers and producers, and thus a decrease of the importance of gatekeepers. There is no standard Internet distribution model. Instead, a number of new distribution methods (such as filesharing) exist alongside ones that are more traditional. With regard to webfilms, distribution can work in a number of

⁸⁵ With the arrival of digital TV and the convergence of media in general, this communication model is no longer as rigid as it used to be. Particularly in TV, the emphasis is increasingly on more active consumers who interact with the broadcasts, for example by ‘pressing the red button’. Additionally, a media product such as ‘Big Brother’ is not only confined to TV. Instead, it consists of the various TV shows, including audience phone-ins, voting and participation, and simultaneously takes place on the Internet via discussion on forums, live streams, etc.

⁸⁶ Unlike popular discourse suggests, the Internet is not free of the hierarchies found for example in the media industry. Major companies still have a dominant position within the Internet with their web presences that often tie in with traditional media broadcasts, as exemplified by the BBC and CNN websites. Furthermore, aspects such as search engine rankings also contribute to ‘hierarchies of visibility’ on the Internet.

different ways and often, the roles of gatekeeper and distributor are non-existent or greatly diminished. Furthermore, the functions of distributor and exhibitor are often conflated. Exhibitors can negotiate with producers directly (on some web portals and entertainment sites); alternatively, producers are simultaneously exhibitors (i.e. on a personal homepage). The core of the following case study is the analysis of distribution and exhibition platforms for webfilms on a variety of different new media locations, including mobile media such as mobile phones. It proceeds to trace webfilm culture and community via an overview of online film festival exhibition sites. The emphasis here is on film festivals that foreground online-specific films, i.e. webfilms that are made for the Internet (as opposed to short films that are exhibited online). Lastly, this section briefly considers offline distribution and exhibition of webfilms, which, while somewhat paradoxical, has been a distribution strategy adopted by some webfilm exhibitors.

5.2. Webfilm Distribution and Exhibition

5.2.1. Viral Distribution

Viral distribution originally stems from viral marketing, an advertising technique that relies on social networks to spread brand awareness exponentially and like a virus, through word-of-mouth, ‘refer-a-friend’, blogging, emails, forums, and so on. The idea behind viral advertising is that people in social networks will pass on entertaining or ‘cool’ content, thus rapidly spreading it. Viral marketing has gained much more significance and momentum through the Internet as it is here that viral messages can be spread rapidly, thus creating a ‘buzz’ surrounding a brand⁸⁷ with a resulting increased awareness at a fraction of the cost of traditional advertising. Viral messages often contain funny videos, games, pictures, or other entertaining, interactive content. A subcategory of viral marketing is the viral commercial – a

⁸⁷ Viral marketing is also referred to as ‘buzz marketing’.

commercial made just for the Internet. This, arguably a subcategory of webfilm, will be discussed in Case Study 3.⁸⁸

Viral distribution thus refers to the distribution of webfilms using word-of-mouth. Popular techniques are ‘send to a friend’ or ‘tell a friend’ links on almost every site exhibiting webfilms (for example AtomFilms; iFilm; Dailymotion) as well as traditional emails.⁸⁹ Viral distribution has gradually become a ‘buzz’ in itself. Short videos including webfilms distributed under the viral method are increasingly categorised as ‘viral videos’ and have almost taken on a genre-like quality. Sites such as iFilm have one entire category devoted to ‘Viral Videos’, while BoreMe and viralX exhibit exclusively viral content, especially videos. The latest development is a viral competition run by Channel4 by the name of ‘germ’, with the aim of finding “the viral stars of tomorrow” (Channel4.com Ideasfactory n.d.: Homepage). With a deadline of 5th December 2005, there are five entry categories, one of which is ‘movie’ (alongside image viral, interactive viral, international viral, agency viral) (Ibid).

It is important to note that viral distribution can often be unintentional. This has especially been true for two short videos distributed on the web. The most famous viral video and one of the first video Internet phenomena was *Star Wars Kid* (2002) – a short video of a 15-year-old boy from Quebec (Ghyslaine Raza) recording himself fighting a mock battle using a golf ball retriever as lightsabre:

⁸⁸ For a good overview on viral marketing, see Wikipedia (n.d.m). The Channel4 microsite ‘germs’, a viral competition discussed below, also has a useful introduction including examples of online viral marketing (Channel4.com Ideasfactory n.d.).

⁸⁹ Viral entertainment site BoreMe has as its motto: ‘the best of your inbox’.



Figure 1: Still image from online video *Star Wars Kid* (2002).

A few months later, the video was allegedly stolen by his classmates who uploaded it to filesharing software *KaZaA* as a joke. It was an instant hit and was downloaded millions of times within a few weeks and subsequently re-edited more than 30 times. Other examples of its popularity include a petition for the ‘Star Wars Kid’ to get a Cameo Role in *Star Wars Episode III* (2005), which was signed by over 140000 people (Jedimaster.net and Quimby n.d.). In July 2003 however, Ghyslain’s parents filed a lawsuit against the four classmates, claiming compensation of \$225000 as Ghyslain had suffered public harassment and derision and had to undergo psychiatric treatment as a result (bbc.co.uk 2003; Wikipedia n.d.n; Wired News Report Null 2003). To the present day, *Star Wars Kid* is one of the most popular viral videos and is still being exhibited as a classic on many webfilm and viral video sites.

The second, more recent popular viral video is the ‘Amarillo spoof’ performed by British soldiers in Iraq. Following Peter Kay’s video, miming to Tony Christie’s 70s hit, troops in the Royal Dragoon Guards created a home video on their army base. Like Peter Kay in his video, look-alike Sgt Roger Parr marches towards the camera, summoning up people along the way. Where Peter Kay summons fellow celebrities (the video was made as part of UK charity Comic Relief), Sgt Parr summons members of his squad in various stages of dress and costumes.



Figure 2: Still image from online video Is this the way to Amarillo (2005).



Figure 3: Still image from online video Is this the way to Armadillo (2005).

The spoof, which was initially emailed to Army friends in London, was so successful that it crashed the Ministry of Defence computers as people tried downloading the 52MB – size file (bbc.co.uk 2005c). Its subsequent popularity resulted in one site having to provide three extra servers to make it available for download where at its peak it was downloaded approximately 2000 times a day (The Humor Zone 2005). The video was also featured on mainstream channel news and an Internet hit worldwide.

Overall, viral distribution is a good and relatively cost-effective technique of distributing short videos on the Internet. There is a difference between intentional and unintentional distribution and as we will see in the discussion on viral commercials, ‘unintentional’ or accidental distribution is often part of viral distribution’s buzz. That is, part of viral distribution is its discourse of the new, exciting ‘next big thing’ passed on amongst a social network via word-of-mouth. However, due to the great competition in video content, it is increasingly difficult to create a buzz surrounding a short video. Often, the buzz generated is a double-edged sword, as it is increasingly more extreme content that generates this buzz as discussed in the example of viral commercials in 6.4.4.

5.2.2. Distribution via a File-Sharing Network

Peer-to-peer file-sharing networks for some time have been a highly efficient Internet distribution method for music, software, and more recently, films. While the great majority of files distributed via such networks continue to be illegal, the technology in itself is ideal for webfilm distribution. Kronschnabl and Rawlings (2004: 33) argue that for independent filmmakers, file-sharing networks “could both provide distribution channels as well as an income”. The advantage of a distribution model based on file-sharing networks is that traditional distributors are cut out and so access and communication is directly from producer to consumer and vice versa. The disadvantage is the issue of copyright protection: similar to webfilms transmitted via HTTP download, filesharing means that each user will save a copy of the film to their hddisk where it can easily be modified. It is thus much more difficult to enforce copyright. There are a number of peer-to-peer systems (*WinMX*, *KaZaA* etc.); the currently most popular is the *BitTorrent* technology.⁹⁰ *BitTorrent* is a protocol designed for transferring files and in submitting a torrent of their film, a webfilmmaker can easily distribute it worldwide, thus eliminating any distributor and gatekeeper. Kronschnabl and Rawlings (2004: 197ff) provide detailed instructions on how to distribute films through a file-sharing network. An example of a webfilm

⁹⁰ For detailed information on the technical background to *BitTorrent* and other filesharing software, see Cohen (2003) and Pouwelse et al. (2004).

distributed via a file-sharing network is the Star Wars Fan Film *Star Wars Revelations* (2005).⁹¹

Overall, distribution of films via a file-sharing network is one of the more promising areas of webfilm distribution. It is instant and easy to set up, with the potential of reaching a wide audience. The disadvantage is the still unregulated aspect of file-sharing and the association it has with illegal downloads - free networks such as *BitTorrent* are used primarily for illegal distribution of music, software and increasingly feature films.⁹² On the upside, however, a distribution model that cuts out the distributor and thus the gatekeeper will enable direct communication and interaction of producer and consumer. It remains to be seen what effect peer-to-peer networks will have on traditional distribution; however, for webfilmmakers who want to distribute their film to as many people as possible, file-sharing networks are one of the best and most instant methods to do so.

5.2.3. Exhibition on a Personal Homepage

The easiest method of distributing a webfilm is by exhibiting it on a personal homepage. All that is required is to upload the film onto the hosting server. Either it can be exhibited embedded into a webpage or it can open up as standalone film (see chapter 4.4.1.). Since this method requires the film to be transmitted via HTTP streaming, it means that it is downloaded onto the harddrive of each individual user (into the folder 'Temporary Internet Files'). Thus, exhibition merges with distribution as each time the webfilm is viewed a copy is also distributed to the user's computer. A good example of webfilm exhibition on a personal homepage is the site of French artist Systaime (<http://www.systaime.com/>).

⁹¹ *Star Wars Revelations* (2005), unlike most of the webfilms discussed here, is 40 minutes long. It is distributed mainly via the file-sharing technology *BitTorrent* alongside online sites such as iFilm and has become a success: "In only one week online, an estimated 1,000,000 people have already downloaded *Star Wars Revelations*" (Thompson 2005).

⁹² A friend of mine downloaded *Star Wars Episode III – Revenge of the Sith* (2005) using *BitTorrent* over a period of 4 days.

5.2.4. Exhibition on Web Portals and Web Entertainment Sites

There are an increasing number of web portals and web entertainment sites offering anything from short films and games to trailers, viral videos and animations. Many of these sites typically accept submissions, which constitute the great majority of the sites' content. The terms and conditions of the submission process however vary greatly, as does the model of distribution used. The following two are examples of webfilm exhibitors.

iFilm (<http://www.ifilm.com>) is one of the biggest exhibitors of online video, with over 10 million visitors monthly. It claims that the exhibition of webfilms on their site is principally free – all a creator has to do is submit his or her film. However, they also state that it will only be exhibited if selected by the “Programming Committee for complimentary Premium Benefits” (iFilm, Corp. n.d.). If not chosen, the only other option available is to purchase an exhibition package for the film. The package includes a film's encoding, hosting, and streaming and the cost varies. The 3-month-package (\$75) and 12-months-package (\$200) both are for normal submissions, which means that, allowing for encoding and other preparation work by iFilm, the film will be launched within 4-6 weeks. There is also an ‘express option’ to ensure a film is online within a week, which costs an additional \$100 (Ibid).

iFilm exhibits a film alongside information about its maker, with the option of including contact details:

Unlimited hosting and serving for three months or one year: NON-EXCLUSIVE! (That means you retain all rights.)

Custom Film Detail Page, which includes: film still(s), total running time, synopsis, cast and crew credits, "Email to a Friend" feature and production notes.

Personalized Filmmaker Page, which includes: A list of all the films you have live on IFILM, contact info (optional) and background info on past and future projects.

(Ibid)

Regarding the legal requirements for submission, iFilm only accepts films that have all rights and clearances, including music rights, and a webfilmmaker has to agree to their ‘Terms of Service Agreement’ when submitting a film. iFilm consider

themselves exhibitors, and compare their site to a local cinema. While they organise the screening of the films, they ask webfilmmakers to promote their film themselves, through emailing people and posting on film-related messageboards.

To sum up, iFilm accepts and exhibits every short film (apart from home movies and pornographic material) on a non-exclusive basis. Filmmakers retain all rights and are thus able to exhibit their film on other sites simultaneously. iFilm has a number of distribution partners including video blogs, portals, and mobile operators. However, promotion is a webfilmmaker's own responsibility, and unless selected by iFilm, s/he furthermore has to pay for the exhibition package. iFilm was acquired by MTV Networks in October 2005 for \$49m (Gilbert 2005; iFilm, Corp. 2005) indicating a strengthening and increased desirability of online video and also illustrates the current trend of traditional 'offline' media acquiring online brands.⁹³

AtomFilms (<http://www.atomfilms.com>), similar to iFilm, gets much of their content by accepting submissions. The main difference to iFilm is that AtomFilms operates more like a traditional distributor in that it is highly selective of the content they choose and promote. Unlike on iFilm, it is not possible for webfilmmakers to purchase any exhibition package to broadcast their film on the AtomFilms site. While on iFilm, filmmakers retain all rights to their film, AtomFilms offers the films selected an exclusive contract. For submission to either site, webfilmmakers have to prove that they have all clearances and legal rights to the film, prior to any distribution. Founded in 1998, AtomFilms has over the years used a number of different ways to create revenue, including releasing compilations of its films on VHS and distribution to various outlets such as television, traditional movie theatres, airline entertainment services, and other Internet and broadband services (Salmi 2004). The latest platforms for distribution are mobile phones and the mobile games console PSP in what they call 'Mobile Movie Theater' (GameSpot Staff 2005; Landen n.d.). Revenue is furthermore created through advertising which has become

⁹³ Another example is ITV's offer to purchase the online brand Friends Reunited, for £120m (Martinson 2005).

more important as broadband uptake has risen and visitor numbers to the site have increased – AtomFilms today (2005) report over 5 million unique visitors per month (AtomShockwave n.d.). Some webfilms have made a transition to TV, including the series *Angry Kid* by Aardman Animations. It debuted on AtomFilms on 8th May 2000 and has since continued to be successful both on TV and on the site (bbc.co.uk 2000). AtomFilms is not only one of the webfilm pioneers but also one of the most adaptable web properties, characterised by a high degree of innovation and new business ideas, not all of which have been successful.⁹⁴ One of its latest moves in September 2005 was a distribution agreement with Yahoo, AOL and other search engines to list and promote AtomFilms content on their sites (AtomShockwave 2005; Olsen 2005). Furthermore, in January 2006 AtomFilms launched an online studio dedicated to the production of video specifically for online audiences and Internet delivery (Associated Press 2006; Atom Entertainment 2006).

Overall, AtomFilms functions very similar to traditional offline distributors. The site selects which films it wants to host, promote and distribute, in return for exclusive distribution rights. While it is more difficult for webfilmmakers to exhibit their films on the site, it is potentially more successful, due to the wider reach of AtomFilms and their distribution and promotion efforts across the Internet and other media.

5.2.5. Exhibition on Video Community Sites

In 2005, a number of video community sites started to appear. Two popular examples are US-based YouTube and the French site Dailymotion. These sites are platforms hosting homemade and personal videos, with the aim to share and exhibit such content. All video is submitted by the sites' users but has to pass certain editorial restrictions and size limits. The service is free, thus providing an ideal platform for webfilmmakers to find a wider audience. The difference to traditional webfilm exhibition on the portals discussed above is the sites' community aspect and their focus on not webfilms but homemade and personal video. Users have to sign up to submit a video, and are encouraged to participate in the community via using the sites' instant message and email system and blogging. Furthermore, users of video

⁹⁴ Examples of failures include the mobile exhibition platforms for AtomFilms, 'AtomToGo' and 'Mobile Movie Theatre' and also their early distribution and syndication attempts.

community sites are typically prosumers – the emphasis is on creating friends networks, forming groups, and commenting on others’ videos. Video community sites are the moving image equivalent to other media sharing communities such as flickr for photos and Blogger for text. They are the most recent addition to the ever-increasing phenomenon of online social networks and have only gained momentum since 2004. The reason for their increasing popularity is a combination of wider availability of video cameras, for example in mobile phones and as part of digital still cameras, the decrease in the cost of hosting and server space and the general rise of visual and moving image culture. Overall, while the advantage of video community sites is their wide reach and their free availability, the disadvantage is the high quantity of low quality content (such as personal and home videos). Thus, the exhibition context here is not one of film but one of home videos.⁹⁵

5.2.6. Mobile Exhibition Sites

Mobile exhibition of webfilms is not an entirely new concept. In 2000, AtomFilms launched a service to deliver webfilms to portable devices such as handheld computers. The service, ‘AtomToGo’, was initially launched in conjunction with a new Microsoft Pocket PC and more than 20 webfilms were made available in a new section on the AtomFilms website.⁹⁶ However, ‘AtomToGo’ never took off, and AtomFilms’ CEO Mika Salmi admitted in 2005 that the service was ahead of its time (Evangelista 2005a). Early distribution of webfilms to mobile devices was furthermore attempted by webfilm exhibition site The New Venue (<http://www.newvenue.com>). In November 2000, Jason Wishnow, the owner of The New Venue, launched the world's first PDA film competition called ‘The Aggressively Boring Film Festival’. As a result, 69 webfilms were submitted with the exhibition platform of Palmtops in mind, and to this day can be downloaded to a Palm OS but can also be viewed online (The New Venue: ‘Takeout’ section). Interestingly, Wishnow considered the new exhibition platform and its technological restrictions an artistic challenge, prescribing potentially new artistic forms:

⁹⁵ See Graham (2005) for an overview of video community sites.

⁹⁶ This section was located at <http://www.atomfilms.com/togo> and it is now a dead link. For more information on AtomToGo, see mobic.com (2000) and will (2000).

Originally, I wanted to push the limits of the Internet because that was a new, unexplored medium. Now the PDA offers similar challenges to the early days of online film... Video on a PDA is like video on the web a few years ago - small, choppy and the less detail the better.

(Veltman 2001)

The New Venue planned a second PDA film festival; however, this never materialised, and the site itself has not developed any further since 2001. Overall, early webfilm exhibition on mobile devices, while providing partly an artistic niche, was not a commercial success and quickly abandoned by the two pioneers.

Since then, there has been a new interest in mobile exhibition platforms, particularly over the last two years (2003-2005). This was coupled with an increase in moving image as cultural form of expression and the advance of mobile technologies. The distributors are online entertainment portals such as AtomFilms and, in the UK, kontraband (<http://www.kontraband.com>), and the technology relies on existing functionalities of the respective mobile device. Webfilms however are only a small part of what is being exhibited on the move – more popular are short TV clips (for example from football and reality TV), and music videos. Since mobile exhibition is in its infancy, it remains to be seen to what extent webfilms will be watched on the move.

It is the new generation of mobile phones with 3G technology that enables mobile phones to become an exhibition platform for moving image. 3G is an abbreviation for the third generation of digital mobile phones that use a combination of technologies to deliver high-speed broadband connections. In mobile telephony, third-generation protocols support much higher data rates than previous protocols. This enables the streaming or downloading of live pictures, video and other multimedia applications at speeds previously unknown on the mobile telephony network. While feature films can already be purchased offline (stored on a memory card) for viewing on a mobile phone (Games Press 2005), the latest trend in the UK is to offer short virals and music videos for download. Kontraband, an online entertainment portal hosting mainly ‘funny films’ and short clips, has started to provide content including virals, animations, home movies and funny ads. While these services are currently only available on one mobile phone network provider

(the provider 'Three'), kontraband plans to launch on other mobile networks soon (kontraband n.d.: '3G' section).

In Asia, on the other hand, where mobile technology is generally much more advanced, short entertainment has been distributed on a much greater scale. MovieSeer, a mobile phone content distributor, has been licensing iFilm's content to distribute to mobile phones in 13 countries and territories in Asia since March 2005 (MovieSeer n.d.: 'About Us – News' section).

Overall, however, webfilms are only a small aspect of content distributed and exhibited on mobile phones. In the UK, the most popular content at the time of writing has the form of music videos. The video of the artist James Blunt's latest single was premiered on mobile phones (on the 'Three' network) on the 21st November 2005. Another new development is to create a music video exclusively for mobile phones. The band Hard-Fi is arguably the pioneer, with the re-release of their single *Cash Machine* on December 26th 2005, which was shot primarily with a mobile exhibition platform in mind (Gibson 2005; NME.com n.d.).

It remains to be seen what form mobile phone distribution of webfilms will take, and which forms will become most popular for mobile phone distribution in Western Countries.

Similar to webfilm exhibition on mobile phones, the exhibition on other mobile devices is currently in its infancy. Early forays into webfilm exhibition by AtomFilms and The New Venue on Microsoft Pocket PCs and PDAs respectively were short-lived. Portable multimedia devices with the technical capability to playback moving image have only been available for the consumer market on a wider scale since December 2004. This month saw the launch of the first commercially successful multimedia device, Sony's PSP (PlayStation Portable), in Japan. While the PSP is primarily marketed as a mobile games console, it was in Sony's commercial interest to push it as multimedia device with the capability of playing back video clips, in order to broaden their target market. Thus, it teamed up with ABC News and AtomFilms in order to provide downloadable short news clips and webfilms, for playback on the PSP. AtomFilms subsequently made available

three short films to download free of charge onto the PSP, calling it 'Mobile Movie Theatre'. Sony sponsored the offer until the end of May 2005 and Mika Salmi, atomfilms' CEO, hoped this was only the beginning:

Salmi said these three films are just the initial slate, and that AtomFilms is watching the performance of the launch to decide whether to offer more PSP-formatted video files.

(Gupta 2005)

However, the 'Mobile Movie Theatre' section has now disappeared from AtomFilms' website (AtomFilms n.d.e). It is difficult to assess the success of 'Mobile Movie Theatre' and the exhibition of AtomFilms' webfilms on mobile media; however, Mika Salmi, has claimed that the company consider making more films available for portable devices, including mobile phones (Evangelista 2005b). There have not been any such developments at the time of writing (November 2005). Other mobile multimedia devices include Creative's Zen Vision, and, more significantly, Apple's recently released iPod Video. Launched on the 12th October 2005, the player was initially marketed with the slogan 'Watch Your Music!' and promoted with an exclusive U2 music video (*Watch Your Music* 2005). Already highly successful with iTunes, their legal download store for music in mp3 format, Apple in 2005 added a Video section to their store to offer downloadable music videos, short clips, and TV episodes (Apple.com n.d.).⁹⁷ Similar to iTunes' sale of music in mp3 format, videos purchased through iTunes can be stored and watched on a computer or transferred to an iPod Video, to be watched on the go. Currently, there are no webfilms being offered on iTunes. Instead, the 6 short films on offer are animated shorts of animation studio Pixar – the CEO of Apple is also the CEO of Pixar. Alongside the Pixar shorts, Apple has also entered a deal with Disney and ABC Television to offer TV episodes of popular TV shows such as *Desperate Housewives* and *Lost*. The biggest focus of the iPod Video, however, remains in being a player for music video. There are over 2000 music videos on offer for purchase, and it is music videos that the main aspect of Apple's marketing and the iTunes store focus on. The pricing strategy is \$1.99 for every clip (£1.89 in the UK)

⁹⁷ For a discussion of iPod Video, see Apple Computer Inc. (2005b) and Sushubh (2005).

– be it music video, Pixar short, or TV episode. There are other options such as bulk purchase, for example, a 24-episode season of *Lost* for \$34.99, while movie trailers are offered free of charge.⁹⁸

Overall, at the time of writing (November 2005), the exhibition of moving image on mobile devices is developing at a fast pace. However, it is difficult to predict what forms are ultimately going to be successful. Early indications are that music video on both mobile phones and mobile multimedia devices are its most popular form. The concept of legally downloading short video and watching it on the go is also proving popular – in the first 19 days since offering iTunes Video, Apple reports to have sold more than 1m videos (Smith 2005). To conclude, unlike music videos and TV clips, webfilms have not significantly entered mobile exhibition on either mobile phones or other mobile devices at the time of writing. However, given a good infrastructure and central distribution centre such as iTunes, there is no reason why webfilms should not be exhibited on mobile devices in the future. After all, the screen resolution of webfilms lends itself perfectly to viewing on a device with a small screen, such as the iPod Video and similar mobile media devices, or indeed a next generation mobile phone.

5.3. Internet Film Festivals

A good platform for webfilm exhibition is on Internet film festivals. There is no clear terminology with regard to Internet film festivals. The term sometimes refers to film festivals that take place entirely online but where the submissions also include offline films (for example Fluxus Online). In this thesis, however, ‘Internet film festival’ is used in a more narrow sense: it refers to Internet-only film festivals that focus on films that have been made specifically for the Internet as exhibition medium. This definition excludes short films that have later been made available for Internet consumption. Some of these webfilm festivals are briefly discussed below.

⁹⁸ Episodes of US TV shows are currently not available in the UK iTunes store.

5.3.1. Seoul Net Festival

The SeNef film festival (<http://www.senef.net>) differentiates between online and offline films (Seoul Film Festival and Seoul Net Festival respectively). The Net Festival has been running annually since 2000 and it is arguably one of the biggest online festivals focussing exclusively on webfilms. Categories include Web-Work and Cinema4Net (separated into ‘domestic’ and ‘international’ competition), and online jurors include web and digital artists including artist and webfilmmaker Systaime. SeNef considers itself at the cutting edge of net filmmaking:

Seoul Net Festival is trying to introduce talented visual artists all over the world and their brilliant works and is to provide a full access to understanding specific constraint given as “the Internet” and “New Media”. As one of the best online festivals in the world, through last 5 years, Seoul Net Festival has extensively engaged in current digital discourse governed by unprecedented aesthetic merit and achievement.

Seoul Net Festival (2005)

This is furthermore reflected by the classification of films not in genres but in simple categories of Web-Works and Cinema4Net, a classification that is to reflect “the worldwide trend of ambiguous genre beyond fiction, documentary, experimental, animation, and media art” (SeNef n.d.: Info – SeNef 2005 section).

5.3.2. FIFI Internet Festival

Starting in 1999, the FIFI Festival (<http://www.fififestival.net>) was the first Internet-only film festival. The festival rules clearly outlined and defined the criteria for an Internet film:

“By Internet film we mean all visual and scripted work that has a URL address and that makes use of technology in its creation, distribution, and vision”. (FIFI, March 99). Description of Internet film: a film containing images and scenes, that has a URL and that has been created for Internet distribution, with its premiere exclusively online. (*Author’s translation*)

(FIFI n.d.: Festival – Règlement Intérieur)

The webfilms are not hosted by the FIFI site but instead, links are provided to all entries and winners. There are 11 different award categories, out of which a maximum of three may carry a sponsor's name:

- Grand Prix Vivendi Universal / Great Prize Vivendi Universal
- Meilleure réalisation / best direction
- Meilleur scénario / best screenplay
- Meilleure utilisation du multimédia / best use of multimedia
- Meilleure direction artistique / best art direction
- Meilleure musique / best music
- Meilleure série / best series
- Prix du jury / Jury's prize
- Prix du public / Website visitors' Award
- Prix Nouveaux Talents / New Talents Award
- Prix de la jeunesse / The Youth Prize

(Ibid)

The festival ran for 5 years (1999-2003) and has since taken a break. In its online history, it gives as reasons for its decline the aftermath of the dotcom crash, particularly, the end of official funding and sponsorship following the third FIFI festival in 2001. The problem, shared across many other online ventures, was of its purpose and future: “Tous posent alors les questions fatidiques : est-ce que la fiction online a un avenir?” (‘Everyone subsequently asks fateful questions: does online fiction have a future?; *Author's translation*). However, the FIFI site has now announced that its Internet festival is to return in March 2006, in a completely restructured form and with a bigger reach, in order to accommodate the changed times. At the time of writing (December 2005), there is no additional information yet as to what these changes entail. It remains to be seen whether the original purpose of FIFI festival, to be an Internet-only film festival for films made specifically for the Internet, will remain at its site's core.

5.3.3. Sundance Online Film Festival

In 2001, the famous annual Sundance Film Festival for the first time contained an online festival as part of its program (<http://www.sundanceonlinefilmfestival.org>). In its press release, it states its purpose was to “represent[s] some of the most exciting work being made for the Web today” (Sundance Film Festival n.d.). There were

three competitive sections - New Forms, Live Action and Animation.⁹⁹ The first year saw only 18 shorts showcased in the sections (Rebort 2001) and the webfilm-specific criteria were questioned by a reviewer who concluded that “these are not works specifically made for a web audience, bearing in mind the kind of limitations that current bandwidth limitations impose. Even with a fast connection, viewing these RealVideo clips at the optimum size (users have a choice of 56k, 100k, 300k) does not always yield great results. The subtitles are usually the biggest giveaway, reduced to thin, blurry and illegible lines in the necessarily small RealPlayer window” (Ibid). In 2002, the Sundance Online Film Festival (SOFF) was sponsored by ShockWave and to this day there exists an old website referring to this collaboration on the ShockWave server (ShockWave 2002). In 2003, for the first time, short film entries to the offline festival were shown on the Sundance Online Film Festival site. This has continued and has increasingly become an important part of the Sundance Online Film Festival. Since 2004, webfilms have also been shown offline, thus blurring the initial strict distinction between the two categories:

Cooper has made an effort to embed the 2004 SOFF within the physical festival. Films from the online fest will play at a digital theater in Park City and, for the first time, five short films from the physical festival will be posted at the SOFF site. Cooper hopes in the next few years to make all Sundance shorts available online.
(Silverman 2004)

An admission fee of \$10 was charged to access 30 webfilms, including live-action and animated films and a New Forms Gallery (Sundance Online Film Festival 2004). In 2005, SOFF was further restructured to include three different sections: Sundance Shorts (‘Exclusively From the 2005 Festival’), Frontier (‘Experimental Artists’), and Behind the Scenes (‘Live! From the 2005 Festival’). The transformation of Sundance Online Film Festival from a webfilm festival to an online exhibition space for various aspects of the Sundance Film Festival was thus complete. The ‘Frontier’ category, now representing the webfilm aspect of the original SOFF, is the new umbrella term for the webfilm category. It is described as:

⁹⁹ The initial three categories were Animation, Digital Video Works and Interactive Works (Rebort 2001). However, this changed to New Forms, Live Action and Animation in 2002 (Royal 2002).

The most innovative work by Digital Artists using interactive, non-linear, and experimental forms of storytelling...they force a revolution in the thinking of what is possible and expand our notions of art.

(Sundance Online Film Festival 2005)

The Frontier section contains the subcategories of Frontier (formerly 'New Forms'), Films (formerly 'Live Action'), Animation (same), and Docs (new category), and has replaced the earlier webfilm categories. Unlike in 2004, the webfilm festival in 2005 is freely accessible, while the Short Film section remains accessible only by registration. It remains to be seen how the Sundance Online Film Festival's future is shaped as webfilm festival. The current development is characterised by a reshaping of SOFF from a festival exclusively for webfilms to a convergence of web and short films, with an increasing emphasis on using the online site as exhibition space for the offline festival's short films. The redefinition of webfilms with the Frontier category and the subsuming of short films under the category are furthermore indicative of the increasing difficulty differentiating webfilms and short films.

5.4. Offline Distribution and Exhibition

5.4.1. DVDs and VHS

There are a small number of webfilms published and distributed on hardcopy media, particularly DVD. The earliest example of webfilm publishing on VHS was a number of compilations released by AtomFilms from 1999 onwards. Compilations such as *Women in Film* (2000), *Definitely Not Hollywood: Extreme Comedy Edition* (1999), *Paranoia* (2000) and *Premiere Films* (2000) were all sold by AtomFilms through their online store but this was subsequently closed.¹⁰⁰ It is very difficult to find a reference to these early VHS compilation tapes; however, one store (BuyIndies.com) is still selling one of the tapes and some other ones are listed on a review site (Rotten Tomatoes n.d.). After this unsuccessful distribution of webfilms on traditional media, in 2004 AtomFilms teamed up with CustomFlix DVD services

¹⁰⁰ At the time of writing (November 2005), the AtomFilms store only sells PC games.

to provide customised DVDs on demand (CustomFlix n.d.). From a selection of over 125 webfilms, buyers can choose up to 10 clips or a total of 90 minutes of footage to be put onto one DVD. CustomFlix then produces the DVD, including full colour customised cover, and ships it directly to customers. There is no data yet regarding the success of the DVD compilation service for AtomFilms' distribution. Few other webfilms have been distributed professionally via DVD or VHS. Two noteworthy exceptions are a webfilm compilation DVD featuring French artists and VJs Systaime and V-Atak, and a number of Brickfilm¹⁰¹ compilations. In both these cases, the compilations were created by site owners and webfilmmakers and distributed either on their own site (such as Brickfilms.com n.d.) or via online shopping sites (for example Invisible Armada n.d.). Overall, however, offline distribution via media such as VHS or DVD is uncommon. While it may be relevant to have alternative offline distribution media for webfilms to reach viewers in areas not yet connected to broadband, it will become even less relevant as broadband penetration increases beyond its current market dominance of Internet connections in the UK and across the world.

5.4.2. Offline Film Festivals

There is a great number of short film festivals worldwide, many of them promoted online, where webfilms could in theory be screened as part of their program. However, it is rare for webfilms to find offline exhibition for a number of reasons. Firstly, since webfilms are typically made for a resolution of 320x240 pixels, showing a webfilm on a big screen will result in lower quality and a pixellated image. In addition, the viewing context of a computer screen and a website often contributes to the viewing experience and constitutes a different type of audience – that is, a more active user (rather than a mere viewer) selecting the films he or she wants to view. This includes the choice to abort or click on another film should a webfilm not be worth a user's attention. Despite these aspects, there are a few instances where webfilms have been screened as part of offline film festivals. One example is the 'Prix du meilleur webfilm' ('Prize of the best webfilm'; *Author's translation*), a category which first entered the Cannes film festival (Semaine de la

¹⁰¹ 'Brickfilms' are stop-motion animated films featuring Lego figures and environments.

Critique) in 2001. Initially sponsored by now defunct film and webfilm site *monsieurcinema.com*, the prize was in its first year won by Gosselet and Brandily for their film *Gotchaaa* (2001) (*monsieurcinema.com* 2001). In 2002, the winner of best webfilm was *Kunstbar* (2002) by The Petrie Lounge (Objectif Cinéma 2002). Subsequently *monsieurcinema.com* became part of Internet provider Alice's web presence and was simply turned into a film section with no obvious links to its past as webfilm exhibitor or sponsor of the Cannes webfilm category (Telecom Italia France n.d.). The category of 'Prix du meilleur webfilm' was discontinued and there has been no further offline screening of webfilms in this context. A different example of films primarily made for Internet exhibition shown offline is that of Star Wars Fan Films. While their normal exhibition is online (at AtomFilms) with occasional offline exhibition at fan meetings or in the context of the annual Star Wars Fan Films Awards, a selection of Fan Films were screened in Cannes in 2005 in the short film corner. The screening took place on 19th May, thus accompanying the cinema debut of *Star Wars Episode III: Revenge of the Sith* (2005) (Lucasfilm Ltd. 2005b). Overall, however, it is currently rare for webfilms to find traditional offline exhibition on the festival circuit, for the reasons outlined earlier.

5.5. Webfilm Distribution and New Media Discourse

The findings of the second case criticised the discourse of the new, which was central in much of evolving new media theory, in a number of important ways. Bolter and Grusin's (1999) differentiation between 'technology' and 'medium' (see 2.4.3) was helpful in understanding what was new about new media. While the technology of the digital computer was not new – it has existed for at least 50 years – its transition to medium was. The network of webfilm distribution and exhibition confirmed that the digital computer, like other media such as TV and film before, had indeed acquired the new status of medium, since it was firmly embedded in and being constituted by a network of technical, social, and economic contexts. The 'new' in new media, then, referred to the process of 'mediasation' of its technology, as illustrated here by its economic context of webfilm distribution. However, the second case study also refuted other claims about new media's newness, in particular, those

relating to what Bolter and Grusin referred to as 'theology of cyberspace'. That is, webfilm distribution and exhibition methods were not exclusively free from the hierarchies of traditional media distribution, in particular, the influence of gatekeepers. While webfilms thus took advantage of the new distribution and exhibition methods facilitated by new media, the second case study also found that these new forms had not eliminated old methods of distribution. In particular, the fact that a media firm was online did not necessarily mean that their distribution was online only, or that their distribution methods used were less hierarchical, eliminating the gatekeepers associated with traditional offline media firms. The example of one of the main webfilm entertainment portals, AtomFilms, was a case in point. AtomFilms functioned more like an offline media firm in that they were highly selective with regard to the films showcased on its site. Furthermore, their content had in the past been distributed to not only traditional media (including TV channels and airlines) but also included sales of VHS and DVDs. Overall, the example of webfilm distribution and exhibition illustrated that new media distribution has not replaced old methods of distribution. Instead, both old and new methods exist alongside one another and in some cases are even mutually constitutive.¹⁰²

The results of the second case study furthermore refuted dystopian claims pertaining to new media, in particular, those by Virilio (1997, 1999) and Kittler (1997, 1999), discussed in more detail in chapter 2.2.2. Claims regarding the determining power of technology and the role of humans as passive inscription surface (Kittler) or as passive terminals of machinic activity (Virilio) were shown to be incorrect. Instead, Livingston and Lievrouw's definition of new media as information and communication technologies and their associated social contexts (see 2.1.) proved more insightful. While new media use was not exclusively determined by its social context, the investigation into webfilm distribution confirmed the greater role of human prosumers within new media. For example, the method of viral distribution relied on active prosumers passing on webfilms to others, and the web video *Star Wars Kid* (2002) proved how human prosumers were able to prescribe into a network

¹⁰² The example is of a music CD purchased in a shop, converted to mp3 format, and made available in a shared folder on a P2P filesharing network. This applies to all copyright-protected content available through P2P networks. These films, music CDs, and software all were once bought and thus acquired through traditional media distribution channels. An exemption applies in a case where films have been illegally recorded in the cinema.

as active participants, rather than remain passive terminals or inscription surfaces. The most recent webfilm distribution and exhibition platform of video community sites furthermore confirmed that an exclusively dystopian, technologically deterministic view of new media was incorrect. Some additional results of the second case study are summed up below.

5.6. Summary

This second case study started by considering new forms of distribution in relation to new media, as exemplified by webfilms. The Internet-connected computer is the new distribution and exhibition medium that in cooperation with a prosumer facilitates new ways of distribution that are characterised by a many-to-many communication model. Examples of this new and more democratic model of distribution are P2P-networks but also, specifically with regard to webfilms, video community sites and personal homepages. Driving this distribution is a philosophy of ‘viral infection’, whereby media gain exposure through ‘word-of-mouth’ and prosumers’ personal recommendations. This is illustrated by the success of short videos such as the *Star Wars Kid* (2002) that spread rapidly through emails and replication on many web entertainment sites. There is a high degree of convergence between the functions of distribution and exhibition in this model. On video community sites, prosumers often just have to click ‘Submit the film’ in order for the film to appear on the site. Similarly, in the transmission method of HTTP streaming discussed in 4.4.1., viewers automatically download a copy of a webfilm onto their harddrive while watching it.

Alongside the discussion of distribution methods, this case study also traced some of the traditional exhibition platforms for short films, in particular, film festivals, to assess their relevance to webfilm exhibition. The focus was on festivals for webfilms made specifically for the Internet as opposed to short films later exhibited online, and this research produced only a small number of festivals. It was found that initial attempts to exhibit webfilms separately (as new category) has overall not been successful. Instead, the category of ‘webfilm’ has become more conflated with short films (in the Sundance Online Film Festival) and a traditionally webfilm-only

Internet festival has stalled for two years while trying to redefine its identity (FIFI). The exception is the Seoul Net Festival, but even here the category of ‘webfilm’ is somewhat conflated with other forms of online entertainment and art. Further discussion of the findings of this second case study and its actor-network analysis is provided in 7.1.

The future of webfilm distribution and exhibition is difficult to assess at the time of writing (2005) and needs to take into account the changing definition of webfilm. As will be illustrated in case study three, initial artistic discourse saw webfilms as a new, revolutionary film form made specifically for the Internet with a new filmic language influenced by technological constraints. However, in recent years, technological progress, which in itself was furthered by government incentives and economical aspects, has facilitated a great increase in moving image content on the Internet. The result has been a great increase of short films and especially ‘funny videos’ such as TV clips and home videos, which in turn has made it necessary to reassess the category of ‘webfilm’.¹⁰³ With regard to the future of online moving image distribution and exhibition, there are a number of trends that can be observed. Web entertainment portals showcasing short films (for example AtomFilms and iFilm) will continue to be relevant but their distribution strategy is likely to increasingly incorporate other platforms alongside the World Wide Web. This includes mobile media (mobile phones; iPod video and similar all-round media players) as well as potentially TV – the purchase of iFilm by MTV Networks is a case in point. A second relatively recent trend that is likely to increase is short film exhibition on video community sites and on video blogs. Both are prosumer-driven platforms and exemplify the new distribution techniques facilitated by new media. A third observation is the appearance of online video stores, that is, sites selling short clips, TV shows, music videos, and other forms of moving image entertainment for download onto harddisk or onto mobile media. While Apple’s iTunes video store pioneered this trend, other new media firms are beginning to follow suit, most notably search engine Google (Hermida 2006). While the former two stores focus on US-specific TV content, a UK-based online video service has been announced by

¹⁰³ This will be discussed in more detail in 6.4.

Internet Service Provider NTL. In a trial starting in March 2006, NTL, working with P2P software *BitTorrent* will start offering content including movies, TV shows, and music videos to approximately 100 homes (Wilkes 2006). Overall, moving image distribution is increasingly characterised by convergence, particularly between the various media platforms, but also, concerning old and new distribution methods themselves. It remains to be seen how this media convergence is mapped out over the next few years, particularly, in the areas of legal and illegal moving image downloads and the latest exhibition and distribution platform: the mobile device.

6. Webfilm Network 3: Webfilm Discourse and Culture

6.1. Introduction

This third case study shifts its attention away from mostly technological agents of webfilms and instead examines webfilm history and culture. Following Foucault's (1972: 49) contention that discourses are "practices that systematically form the objects of which they speak", it uses discourse analysis to trace webfilm culture in a network including manifestos, websites, the dotcom crash, and webfilms themselves. The analysis starts by looking at the role of manifestos in producing webfilm culture by unifying an idea of webfilms, thus bringing into existence webfilm as a new filmic form. The second part of the case study continues with the archaeology of webfilm discourse by mapping webfilm culture before and after the dotcom crash of 2001. The aim is not to provide an exhaustive explanation of all webfilm culture, but to consider the central nodes of the network and the change in webfilm discourse, including its difficulties and discontinuities, and the position of webfilm culture today.

6.2. Webfilm Aesthetic Discourse: Manifestos and Guidelines

6.2.1. The Function of Manifestos

Film manifestos have a long tradition within the history of cinema. Their function and purpose is to state an aesthetic and often political goal, and they tend to contain a 'call for revolution' in an attempt to break free from what is considered a conservative and reactionary cinema. Traditionally, the content of manifestos has had a distinct emphasis on ideological critique of cinematic conventions and production, offering a revolutionising of filmic form and content with the purpose of cultural and political intervention via the means of aesthetics:

From Luis Buñuel and Dziga Vertov, from Stan Brakhage and Guy Debord, and from Jean-Luc Godard to Laura Mulvey, the basis of the manifesto is precisely to provoke not only a new form of cinema, but a way of re-imagining the cinema itself.

Critiquing these claims, MacKenzie (2000) argues that the result and real effect of cinematic manifestos has been minimal, with most manifestos and films produced under them never able to live up to their radical claims – they “quickly left the world of political intervention and became that most aberrant thing (at least in the eyes of the writers themselves), a de-clawed aesthetic text” (Ibid: 3rd paragraph). Thus, the main function of film manifestos can be described as one of intellectual extremism in the form of a critique of cinematic production and aesthetics at the time. However, manifestos tend not to have any significant impact on cinema. One notable recent exception is Dogme95, which had considerable success in intervening on a greater scale within international cinema. Dogme95, the manifesto written by Lars von Trier and Thomas Vinterberg in 1995, served to provide mainly practical guidelines through its ‘Vow of Chastity’. This ‘vow’ contained instructions to return to a ‘cinema of truth’ via the use of only natural lighting, the sole use of handheld cameras, and the absence of studio filming, amongst others.¹⁰⁴ MacKenzie argues that this focus on technicalities and its resulting separation of filmic form and content is what makes Dogme95 different to preceding film manifestos. That is, the absence of an underlying ideological and political critique as key motivator for the Dogme95 ‘movement’ has facilitated wider cultural acceptance and reach. This is echoed by Roberts (1999: 142) who claims that the rules of Dogme95 have a “largely technical and formal character; there are no political exhortations...it is, rather, a kind of low-key DIY guide for aspirant amateurs”. Webfilm manifestos, which will be investigated below, have similarly taken a focus on technology. Given the centrality of technological agents to webfilm prosumption and distribution discussed earlier in this thesis, this does not come as a surprise. Three different manifestos and their relevance to today’s (2005) webfilm culture will be discussed, including an assessment of their function for webfilm culture and discourse.

¹⁰⁴ For the complete ‘Vow of Chastity’, see Von Trier and Vinterberg (1995).

6.2.2. The Pluginmanifesto

The pluginmanifesto is Kronschnabl's manifesto on filmmaking for the Internet. It accompanies the website plugincinema.com and is featured in Kronschnabl and Rawlings' (2004) book. As explored in chapter 2.6.2., Kronschnabl's theory is based upon the belief of a "digital technology revolution" (Kronschnabl and Rawlings 2004: 77) with webfilms as a means to "reclaim film" (Ibid: 81). Comparing the 'digital revolution' with the Dogme95 movement, the authors consider the pluginmanifesto parallel to the Dogme manifesto, as a means to enable filmmakers to participate in the 'movement':

The pluginmanifesto aims at creating a definitive framework that filmmakers can use to produce films specifically for the Internet: to enable them to work with the medium and to see technological limitations as a creative catalyst.

(Ibid: 80)

First published in 2001 and presently (2005) in its fourth version (pluginmanifesto 1.3), the authors present their manifesto for webfilmmakers in eight points. They begin by remarking upon the absence of a framework for webfilms, which they consider one of its strongest points. The absence of conventions, according to them, enables webfilmmakers to experiment as no structure is in place: "Freed from prescription, it is easier to see the other possibilities open to us in terms of form and structure as well as content" (Ibid: 81). This has the air of a 'war cry', created in line with their underlying idea of the beginning of a pioneering webfilm 'movement'. It is not clear to the author how webfilmmakers can be free from prescription and what these 'other possibilities' are, given that any new film form and structure will need to be defined with and against the existing forms and structures of over 100 years of cinema. This first point is thus unconvincing and more aligned with the discourse of a new movement, rather than constituting any useful guideline. The manifesto's second point refers to the length of webfilms and states that, due to technological constraints, short films (10-15 minutes) are the ideal container for webfilms. This is similar to the limitations placed upon early film, where technological (length of reel) and economic considerations (only one projector present at most cinemas) prescribed

a length of 12-14 minutes. The points are similar not least because they are not fixed prescriptions: as technology progresses, so will the potential for webfilm length. Broadband speed is already increasing fast, and countries such as South Korea and France lead the way with one broadband provider in France already offering 20MB.¹⁰⁵ From a purely technological point of view, the manifesto's second point of recommended webfilm length, while certainly true for the first few years of webfilms, is bound to change as technology progresses. Kronschnabl's and Rawlings third point concerns the structure of webfilms. They argue that, while traditional Hollywood film has brought with it the prescription of narrative as structure, webfilm lends itself to achieving structure through means other than narrative. These alternatives, according to the authors, are partly encouraged by the viewing platform of a computer which "provides more creative possibilities in terms of content since computers are a more interactive delivery platform" (Ibid: 152), and partly, they are suggested by the authors themselves and their mission to claim back film-as-art:

Examine other filmmakers such as Deren, Vertov, Godard and Brakhage to see how they structured their films outside the Hollywood narrative tradition. Structure can be created in many ways using colour, music, chapter headings etc. as a shape from which you can hang the images. Or the structure can simply emerge from within the film, by allowing the content to shape itself.

(Ibid: 82)

This point and the next ('Forget Hollywood...film can be art!') are concerned with encouraging alternatives to traditional Hollywood film 'products' by looking at some specific qualities of the Internet that are capable of producing alternative, 'art' films outside the Hollywood context. Here as in the point on non-narrative structure, the argument is not convincing. It is not clear why webfilms intrinsically should be 'artier' and why they should have less narrative than traditional films, given that such aesthetics are not prescribed by technological factors. Instead, this claim, similar to the first point, is more in line with the discourse of a new film 'movement' rather

¹⁰⁵ See Kelly (2005). The fastest speed in the UK is currently (July 2005) at 8MB. Note however that a possible 24MB has been announced to be available in London in 3 months' time (Ilett 2005).

than grounded in empirical fact. Not surprisingly, the language used is enthusiastic and polemic, and rather vague:

It was decided very early on in Hollywood that films were products and not art. Independent filmmakers and artists have always known this to be wrong and have made films with genuine artistic merit. This usually takes place outside of the traditional studio system, although sometimes it happens from within. Film was hijacked very early on in its career. Claim it back!

(Ibid)

The authors claim that some aspects of the Internet lend themselves to “innovation beyond Hollywood” (Ibid: 153) such as immediacy, ‘bottom-up’ filmmaking, and cooperative filmmaking. ‘Immediacy’ refers to the instantaneous quality of webfilmmaking, i.e. that it bypasses the limits of traditional film production and distribution. While this is correct, it remains unclear how this immediacy is related to innovation in films, i.e. there is no intrinsic link between the immediacy of the Internet and filmmaking beyond Hollywood and beyond narrative. ‘Bottom-up’ filmmaking refers to the reversal of the traditional Hollywood hierarchy. The authors argue that the Internet encourages an ongoing creative process outside the ‘top-down’ method of Hollywood by enabling webfilmmakers to gain feedback for their film-in-progress, thus gaining new ideas that may contribute to a film. This point ties in with the aspect of co-operative filmmaking. Kronschnabl and Rawlings claim that through the Internet, filmmakers can “take advantage of the ease with which they can contact others and work with them on various projects despite the limitations of geography, as information such as text, images and footage can easily be transferred” (Ibid: 154). While it is true that the Internet makes communication, exchange of ideas, feedback, and cooperative filmmaking easier, these are not intrinsic properties of the Internet. Here as elsewhere, the authors tie in their ideas about a revolution in filmmaking with the Internet and connect it to an anti-Hollywood movement that foregrounds film as art, rather than considering it a product. The pluginmanifesto’s first four points are thus mostly concerned with promoting an alternative filmmaking movement as a function of a discourse of the new. Only the second point makes a plausible case for the necessity of film length as prescribed by technological agents

and is thus a valid constraint on the form of webfilms. The manifesto's fifth and sixth points turn more convincingly to some of the technological factors that co-produce webfilms. Point 5 makes a general statement about 'using limitations in a creative way' and states that since much content on the web has been transported across from other media, Internet audiences complain about the lack of quality of the films. The authors claim that webfilms need to find their own form, different to the form of TV and the form of cinema. One aspect of this form of webfilms consists of its technological limitations. Kronschnabl and Rawlings in their manifesto ask webfilmmakers to use limits (such as bandwidth) creatively and to incorporate them into a form characteristic for webfilms. Point five ties in with the manifesto's next point to "use Codecs and compression creatively" (Ibid: 83). Compression is one of the central determinants of a webfilm's quality. Kronschnabl and Rawlings explore some of the aspects that compression prescribes on film form and style. They look at some shot styles of traditional film and how they transfer to webfilms, given compression's technological prescriptions. They argue that the close up and extreme close up as well as the medium shot are acceptable and transfer to webfilms relatively well. This is because in a close up and extreme close up, the data tends to be similar and therefore compression is unlikely to result in a great loss of quality.¹⁰⁶ The same applies to a medium shot, albeit here, according to the authors, one has to be careful not to overload the frame with too many different figures or events. Again, this is due to the increase in differing data, which makes it harder to compress frames while retaining a good quality image. For the same reasons, long shots, panning shots, and dolly shots are to be avoided. Overall, any unnecessary camera movements should be avoided in order to limit heavy compression, which will result in a loss of a film's quality. Thus, a webfilm lends itself to relatively slow action with a preference for close-ups and medium shots involving as little movement as possible.¹⁰⁷ Similar to the point on webfilm length, however, with the progress of technology the aspect of compression will matter less and less and therefore, this point is likely to become less valid in the future. The second to last point of the

¹⁰⁶ Close ups are furthermore better for webfilms due to the small size of the webfilm window. Action taking place in long shots will appear minute in a small webfilm window, while close ups and extreme close ups are ideal.

¹⁰⁷ This is why news is perfect for Internet transmission, for example, on sites such as BBC News online, since it tends to involve mainly a talking head with little other movement.

pluginmanifesto deals with the interrelation of technology and creativity in webfilmmaking. The authors argue that collaboration of techies and filmmakers is a necessity since a good level of technical knowledge is essential to webfilmmaking. The problem is that, as discussed in 2.6.2., Kronschnabl and Rawlings assume an implicit hierarchy of filmmakers over ‘geeks’ insomuch that, while geeks know all about the technology involved, they know little about the craft of filmmaking. Therefore, if filmmakers cannot be educated to make use of the technology, ‘geeks’ should make it work for them. This overlooks the fact that ‘geeks’ with an in-depth knowledge and understanding of technological implications are in a better position to understand and play with technological constraints and thus create the new art forms and new aesthetics of film that Kronschnabl and Rawlings are so keen to promote. The pluginmanifesto ends with another vague point, similar to the ‘war cry’ of the first, third, and fourth point. The authors here ask that the medium and viewing context be kept firmly in mind when creating webfilms:

Above all, don't believe the hype! Convergence is certainly happening but the potential of these mediums is just being glimpsed. What is made for the Internet now can enlighten the forms of the future. The challenge is to create these forms now. This is not a televisual system that sits in the corner of our living rooms, but the Internet: a huge system of information storage and retrieval for individual users, with no centralised control. Seize the day and make your work available to millions of people. Be part of shaping the world's next, great art form.

(Ibid: 84f)

The manifesto thus is intended as a tool to call forth a new film movement. The aim is to provide an intellectual and theoretical framework under which webfilmmakers can help create what the authors consider the new ‘art form’ of webfilm. Despite this aim, we have seen that much of the manifesto consists of a usability guide to Internet-friendly webfilmmaking, foregrounding its technological aspects. As such, it functions as prescription material and illustrates the power of non-human agents including bandwidth, hardware and software.

The pluginmanifesto is problematic for a number of reasons. Its biggest problem is the underlying assumption of a pioneering, new film movement that is made possible by the Internet and webfilms, and that is different to what has gone on before. This claim is reminiscent of other utopianist accounts of the Internet such as Rheingold (1993) who similarly claims that the Internet has created new, decentralised, non-hierarchical revolutionary virtual communities. Kronschnabl and Rawlings take up this discourse of the new and revolutionary, and apply it to filmmaking via the tool of a manifesto. However, they do not provide much evidence for their claims; instead, they argue that, since there is no structure and definition of webfilms in place, this lends itself to a webfilm movement that is anti-Hollywood and anti-narrative, thus emerging as a new art form by default. For the authors, the freedom from traditional restrictions of filmmaking (such as Hollywood, the studio system, distribution/gatekeepers etc.) offered by the Internet automatically translates to a freedom of form and a freedom from narrative and stylistic prescriptions. However, the issue of alternative film is nothing new and it is not intrinsically tied to Internet and webfilmmaking. Artists such as Matthew Barney and Andy Warhol have sought alternatives to traditional Hollywood¹⁰⁸ and its narrative structure and the same is true for film movements such as the French wave and Dogme95. Similarly, claims that the Internet encourages bottom-up filmmaking and collaboration is not an intrinsic property of the web but found within ‘offline’ filmmaking and across other cultural areas. The discourse of the ‘new’, therefore, stems more from the authors’ interest in creating a new ‘movement’ that is revolutionary and anti-Hollywood, rather than being grounded in any actual property of the web. The pluginmanifesto is at its best where it provides technical and practical guidelines for making webfilms and discusses the ways in which technological agents influence form and style of webfilms as determined by technological agents. These technical prescriptions and guidelines for optimal film length and type of shots illustrate the power of non-human agents. The manifesto defines webfilms through technical rather than creative aspects. Hardware, software, and bandwidth prescribe the ‘best’ shots and the ‘best’

¹⁰⁸ For Matthew Barney’s *The Cremaster Cycle* (1994-2002) which consists of 5 films, see Barney (n.d.). Andy Warhol’s films are more familiar, most famously *Empire* (1964). See Comenas (n.d.) for a Warhol filmography.

length for webfilms, thus exercising power within the network. The manifesto functions as these agents' prescription material.

6.2.3. Steve Bennett's Manifesto

Steve Bennett's manifesto (n.d.) was written as a response to the pluginmanifesto and it is published on plugincinema's website. It does not have a publishing date or year; however, since the manifesto features screen shots of Windows *Media Player 6* and Macromedia *Flash 4*, it is likely that it was published shortly after the original pluginmanifesto (around 2001).¹⁰⁹ It consists of four points that deal with the interrelation of software and webfilms-as-software. That is, Bennett considers the difference of webfilms from traditional films via the angle of software. He starts with the point that webfilms are different from films in cinema and on television. His argument is twofold: first, webfilms themselves, unlike traditional films, are not physical objects and therefore relate to software more so than to film:

Web "movies", or the application/incorporation of moving images on computers and the web, exist in a different technical and experiential space than "film" and "television" do. The eventual purpose and implementation of them will likely be something quite different than those of film and TV.

(Bennett n.d.: Section 1)

His second supporting argument is that unlike in TV and cinema, there is no webfilm 'audience' and there are no 'viewers' in the traditional sense. Instead, according to Bennett, webfilm 'viewers' are 'users' and thus more (inter)active towards a film 'viewed'. He claims that the context of a computer does not suit longer films and passive viewing: "Linear "cinema type" movies do not fit with the user environment, leverages, and motivations of either computer or web use" (Ibid). The first point of Bennett's manifesto has to be understood in the context of the year it was written and is problematic to uphold in 2005 for a number of reasons. Firstly, while in theory, a

¹⁰⁹ Windows *Media Player 6* was first released in 1998, followed by version 7 in mid-2000. Macromedia's *Flash 4* was first released in 1999, followed by *Flash 5* in 2000. However it is likely that the older versions were used beyond 2000, since it always takes a while for the newer version of software to gain market dominance. This is illustrated elsewhere in this thesis using the example of the operating system *Windows XP*. It took 18 months from its release in October 2001 to gain market dominance over previous versions of the Windows software.

webfilm or any film broadcast or downloaded on the Internet is not a physical object, to all intents and purposes it can function as if it was. Watching a news clip on the BBC news website is no different in content from watching the same clip used as part of a TV news program, apart from differences in quality and size which however is not an exclusive property of the web – smaller or analogue TVs for example will have a similar inferior visual quality. Furthermore, a non-physical film may be used in a cinema context, as demonstrated by the current move to replace traditional projectors with digital projectors.¹¹⁰ That is, the fact that a digital film, be it a webfilm or a feature film, is non-physical, does not intrinsically make it different from traditional films in the cinema and on TV. Bennett's argument regarding a webfilm's audience is similarly flawed. It is not true that computer users are necessarily always (inter)active and interactivity is not a defining quality of computer- and Internet use. The most obvious counterargument is that of TV viewing. In the first few years of TV, due to limited availability of channels and the absence of a remote control, TV viewing might have been initially passive. However, today's TV and in particularly digital TV is highly interactive and a viewer is simultaneously a user, changing channels frequently during commercial breaks or 'pressing the red button' for interactive programs or even launching teletext services for news, weather, and program information.¹¹¹ The traditional 'passive' viewer can be found predominantly in a cinema context; however, this viewing mode can also be found in the context of computers. Business travellers on a long train journey may view a DVD containing a feature-length film, sitting through it as passive 'viewers' rather than 'users'. It seems thus that the functions of viewing and using are not so much properties of a medium (i.e. computer; cinema, TV) but instead a property of a film. That is, a feature film prescribes a more passive viewing position independent of the platform it is viewed on. Feature film viewing may or may not be interrupted, thus alternating between 'viewer' and 'user' function.¹¹² Overall, the medium of

¹¹⁰ The films broadcast in a cinema equipped with a digital projector are downloaded to a server via a satellite link and the file is then broadcast to an audience just like a traditional film, with great advantages such as lower cost and greater ease of distribution for independent films. This is taking place in the Republic of Ireland and Northern Ireland, and in 209 cinemas UK-wide (bbc.co.uk 2005d; Rohde 2005).

¹¹¹ Teletext (Ceefax) was first launched by the BBC in 1973.

¹¹² The most obvious example of interrupted viewing concerns commercial breaks during feature-length films broadcast on TV. However interrupted viewing can also occur in the cinema: the author

computer is not in itself a 'user' medium. This is also supported by the current move towards offering legal movies for download on the Internet, to be viewed on a computer - BSkyB plans to offer PC-based legal movies for download in the near future (Dennis 2005). Overall, then, both 'user' and 'viewer' are functions that can be found in any context and the functions exist on a scale rather than a mutually exclusive dichotomy as Bennett's manifesto suggests.

The second point of Bennett's manifesto examines more closely the relation between webfilms and software applications. Deploying a dichotomous view, he claims that "non-linear data and content access in the user environments of computers and the web is somewhat diametrically opposed to the linear nature of conventional film and video" (Ibid). Bennett argues that webfilms are a subcategory of software since software is the dominant form of a computer and interaction with software applications its dominant user mode. In his view, there are no discreet, separate objects of film or any other media form. Instead, he suggests expanding the definition of software to include all forms of data such as film, audio, etc. Bennett proceeds to look at software design and narratives, and the potential aesthetic influence this might have on computer and web video:

Consider running video as one of many data formats within larger applications, dynamically drawing in music from one place, video from another, and so forth, so that the movie is delivered and assembled in use. Dramatic narratives can be built this way too, as can symphonies or documentaries or whatever categories one might wish to use (or expand on).

(Bennett n.d.: Section 2)

For Bennett, then, the most promising aspect of webfilms is to move away from the definition of film, and instead consider them part of software applications that, in his manifesto, fits in with his overall theory of computers as interactive user-machines. Webfilms, for Bennett, are software applications. The manifesto's second point reads like a programmer's take on webfilms. Here as in the first point, Bennett considers technological aspects the main determinants of webfilm production and analysis. He

watched the film *X-Men* (2000) in a cinema in Rome in 2000 and was surprised to find that there was a break of around 15 minutes halfway through the screening.

argues that computers are the cause that turn (web) films into software in the same way that the pluginmanifesto claims that computers will cause a new (web) film movement. That is, the new medium is assigned an overwhelming power to change, in this case, film. Bennett proposes that software applications define computers and argues that because of this, webfilms are necessarily a subcategory of software. This, in his view, should result in webfilms becoming more like software – “potentially something much more” than ‘just’ video. For Bennett, there is no such thing as film on the Internet. Instead, he argues that the new medium necessarily changes all old media that are transplanted to it. His view is characteristic of early new media studies and in particular research into the Internet’s influence on old media forms. In early web studies, a great emphasis was on ‘interactive fiction’, i.e. cybertext and the way in which software influenced and opened up new ways for fiction online (see Landow 1997, Aarseth 1997, Montfort 2003). The same occurred with regard to webfilms. Artists in particular were interested in the properties specific to webfilms and the computer platform, and in how these influence the form and aesthetics of webfilms. The site FILE Festival argues (in 2002) that webfilms

are interactive pieces , were [sic] users can modify the unroll of the film, transforming, in this way, the sense of the story. These webfilms announce what will be the interactive movie, in the recent future [sic].

(FILE Festival 2002: Highlights – Webfilms)¹¹³

Interactive webfilms that are similar to software applications are particularly suited to Macromedia’s *Flash* software, which was originally intended to enhance websites by adding interactive elements and moving images and was picked up early on in webfilmmaking due to its easily compressible vector-based technology.¹¹⁴ It is possible, for example, to add so-called *Flash* Hot Spots to set certain points in a film. Upon clicking these points, a user is taken to a different (predetermined) point in the webfilm. This and other features of the *Flash* software, originally designed for interactive web pages, are a good example of the blurring of software and webfilm

¹¹³ The site showcases a number of ‘interactive’ webfilms. Note that the festival seems to have only run from 2000 to 2002.

¹¹⁴ This is discussed in chapter 4.3.5.

thus supporting Bennett's argument.¹¹⁵ However, interactive *Flash* films constitute just a small part of today's available webfilms and there is no fundamental link between computers, software, and the necessity of an interactive, software-like form of film.

The third point of Bennett's manifesto focuses on interactivity and argues that interactivity is intrinsically connected to computer and Internet use:

In fact, there is a good deal of evidence that the mere interactivity of any button or link appearing NEXT to such [linear-type] animations and movies is eventually seen as more compelling than the prospect of sitting stationary at a desktop PC while something plays out from A to B with no other potential for active participation or action given.

(Bennett n.d.: Section 3)

Unlike in Kronschnabl's pluginmanifesto, for Bennett, the length of webfilms is not influenced by bandwidth limitations and issues of compression. Instead, he considers the dominance of short webfilms a consequence of users' psychological expectations for interactivity, which, he argues, is an essential property of computers and the Internet. The problem with this point of the manifesto is that Bennett does not back up his claims. He generally refers to studies and research to support his theory but does not reference any such studies ("There is already a good body of evidence...", "User studies reveal..."). This makes his claims look more like his personal opinion, rather than backed up by other research. This thesis has argued in chapter 2 that equating computers and the Internet with interactivity is fundamentally flawed and that the functions of (passive) viewing and (active) using are more a property of a film rather than the medium it is watched on. It furthermore argues for a scale between viewing and using positions rather than a dichotomy as Bennett's argument and the discourse of the new it is embedded in would suggest.¹¹⁶

¹¹⁵ An early famous example of an interactive *Flash* film is Joe Cartoon's (2000) *Frog in a Blender* where the principle is to increase the speed of a blender containing a frog, until the frog is killed.

¹¹⁶ This is discussed in more detail in the author's response to the first point of Bennett's manifesto.

In his fourth and final point, Bennett draws his manifesto to a conclusion. He argues that issues occupying webfilmmakers now, such as resolution and data rate, will become less important in the future. For Bennett, webfilmmakers focusing on these issues are looking at webfilms with the aim of emulating cinema and TV. That is, concerns about resolution and data rate illustrate an underlying aim of making webfilms that are of a quality comparable to films on TV and cinema, thus deploying criteria of old media to assess new media. In Bennett's argument, this approach fails to realise what he considers the genuinely new aspect of films on the Internet. He therefore proposes that the true challenge of webfilms lie not in comparisons to TV and cinema but in something specific to the new medium, namely, a network of interactivity:

Heck, what we think of as "movies" or "songs" don't even have to be transmitted as single and discreet "files" like their physical counterparts - they can be composed on the fly (via software applications) from elements accross [sic] an array of servers at distant ends of the planet in direct response to user interaction and/or various other data structures, filters, and commands.

(Bennett n.d.: Section 4)

Bennett fails to provide any concrete examples of such 'movies' or 'songs' and the software that makes networked interactive webfilms possible, which renders his argument unconvincing. However, the point regarding new transmission methods for digital files has gained increasing importance in recent years through the spread of the *BitTorrent* technology, a technology that transmits digital files as smaller fragments and not as a discrete file. While Bennett's network of interactivity thus is true regarding the transmission of digital files, his vision of software-like webfilms 'composed on the fly' has not materialised. He moves on to sum up his argument on viewing and using positions and reconfirms a point made earlier. For Bennett, there exists a dichotomy of passive versus active viewing (= using, producing) which are mutually exclusive. He considers passive viewing a property of TV and cinema, and active, productive viewing (= using) a characteristic of computers and the Internet:

Sure, video and other forms of motion pictures will continue to be used by people who want to be merely occupied or entertained in a

passive way - especially within the construct of their respective familiar user environments. But computers in general, and much of what the web is now, is about being "productive" or "creative" - 2 things that few would associate with the activity of current TV viewers, but which will become important features of applications (and of web-enabled devices themselves!) using video and other media on computers and over computer networks.

(Ibid)

This view is to be understood within the discourse of the new that surrounded computers and the Internet in the first few years, where claims of interactivity and creative users took centre stage. This thesis argues that, counteracting this discourse of the new, the 'new' medium has taken on many characteristics of older media, thus making an absolute distinction impossible. Instead, one of the main characteristics of media today is their convergence. Examples include watching films on a mobile phone, a DVD on a computer, or reading newspapers online. Passive and active viewing positions coexist on all media and both do so on a scale rather than on opposite ends.

Overall, Steve Bennett's manifesto is commendable for discussing how the context and user environment of computers and the Internet contributes to the experience, production and consumption of webfilms. Unlike Kronschnabl, Bennett does not try simply to transfer 'film' onto the platform of computer but instead looks for specific qualities of computers and the Internet and how these influence the form of webfilms. The problem with his manifesto is that throughout, it deploys dichotomies (viewer/user; passive/active; TV and cinema/computer) to support his argument, which centres on the premise that new media and webfilms are separate from old media. In this, he shares Kronschnabl's approach: that new media necessarily create a new movement or a new, different experience that is diametrically opposed to the old experience. For Bennett, 'films' belong to cinema and TV together with a passive viewing position. At the other end of the scale are computers and the Internet, and an active user position. In his view, there are strictly speaking no webfilms or films on the Internet. Instead, he argues that webfilms are a subcategory of software with users interacting within a network of computers. While his approach raises interesting theoretical questions regarding webfilm authorship and regarding his conviction that a film is no longer a discrete object, his logical conclusion is

fundamentally flawed. This is because it is based on dichotomies that fail to explain issues of convergence (for example viewing feature films on computers and mobile phones) and furthermore equip technology with the power to change (technological determinism). Given that his manifesto was very likely written in 2001 at the height of the discourse of new media as ‘the New’, this goes some way to explain Bennett’s take on webfilms.

6.2.4. Dogma 2001: The New Rules for Internet Cinema

Similar to the previous two manifestos discussed, the Dogma 2001 manifesto too was written in 2001. In direct reference to the Dogme95 manifesto by Lars von Trier and Thomas Vinterberg, Dogma 2001 consists of ten short rules designed to provide a framework for webfilmmakers to adhere to. Its author is not identified and the manifesto is provided with a contact email address only on the site <http://www.neocinema.com/>. Evident in the hosting site and title, the author considers webfilms a new and unique form of films that is unlike ordinary films. S/he argues that the Internet as exhibition medium is the reason why new rules are needed, since it prescribes various unique technical and sociological requirements for films:

This is a different venue, with different requirements: The Internet has severe bandwidth limitations, there's a lot fighting for the viewer's attention, and there is a significant community aspect unique to the medium which should be taken into account.

(Neocinema 2001: First paragraph)

The ten rules thus address these perceived constraints from a practical viewpoint. The first rule unsurprisingly asks that the total running time of a webfilm not exceed five minutes while the second rule states that “something interesting must occur within ten seconds” (Ibid). Both these points address the perceived problem of limited attention span within Internet users. The viewing environment, for the author, is central to understanding the difference between film and webfilms. The viewing context of a computer, via distractions of other applications, incoming emails, various windows combined with the everyday domestic setting of a computer prescribe that something exceptional needs to happen in a webfilm in order to retain a viewer’s attention. This is in sharp contrast to other viewing contexts such as

cinema where “the environment forces the viewer to focus their attention on the screen, allowing the movie to take its time establishing itself” (Ibid). Thus, the viewing environment has an influence on webfilm aesthetics since it demands that something extraordinary happen at the very beginning of a film. In the next three points (3-5) of the manifesto, the author focuses on additional requirements that s/he considers a consequence of computers and the Internet’s technological context. Point three proposes that only the four most common plug-ins should be used (*RealPlayer*, *Windows Media Player*, *Flash*, and *QuickTime*), point four suggests that films be between 320x240 and 640x480 in size and point five asks webfilmmakers to compose according to delivery size. The latter point was discussed by Kronschnabl in more detail and involves the selection of shots and other techniques suited to a small screen size where fine detail and information in the background for example in long shots may be lost. In point six and seven, *Dogma 2001* deals with the viewing experience and context of webfilms. In point six, the author argues that a webfilm should be provided as a downloadable movie due to the better quality of a download as opposed to streaming video. Point seven suggests to viewers to set movies to double-size, thus increasing the viewing area while not increasing file size. The author suggests for webfilmmakers to use a good compressor in order to minimise the loss of quality when double-sizing their film. In point eight, the manifesto briefly addresses the underlying culture of the Internet as one of sharing, claiming that “any electronic media can be shared” (Ibid). S/he argues that any site exhibiting a webfilm should have a URL that links directly to the film. This means that it can be easily made accessible to everyone and is more easily shared, thus ultimately facilitating quicker distribution. The two final points of the *Dogma 2001* manifesto address the credits of a webfilm. In line with his or her conviction of a limited attention span of computer and Internet users, the author suggests to provide credits in a single frame at the end of a film, which should also include a filmmaker’s email address. Thus, credits are not only short but also provide a quick and easy way for interested users to get in touch.

Overall, the *Dogma 2001* manifesto is a good practical framework for webfilmmakers. Its brevity and overt reference to the *Dogme95* manifesto suggests

that it aims at providing an ideological background to webfilmmaking, thus enabling webfilmmakers to make “true Internet films” (Ibid). The underlying ideological take is that the Internet is a medium for sharing and the author thus suggests that films be provided for download, with a direct link included, and with an email address to facilitate the medium’s community aspect. Unlike the other authors, the anonymous author of the Dogma 2001 manifesto does not display the pioneering or revolutionary spirit that is underlying in both Kronschnabl’s and Bennett’s account. Instead, it is concerned with brief practical guidelines to provide a good reference and good practice for aspiring webfilmmakers. Similar to Kronschnabl’s pluginmanifesto, Dogma 2001 serves as inscription material for technological agents. That is, bandwidth, hardware and software exert power within the webfilm network, which is evident in the focus on usability rather than the creative process. ‘Good’ practice and ‘good’ webfilms, then, are those that comply with the prescriptions of non-human actors. Dogma 2001’s shortcoming is its relative superficiality – it does not sufficiently detail its recommendations, nor does it place the manifesto or webfilmmaking in any wider theoretical context of media. Finally, the manifesto was written in 2001 and has since not been updated. Therefore, some of the issues, in particular technological prescriptions, are no longer as relevant in the age of faster connections. Overall, however, the Dogma 2001 manifesto is a successful attempt at providing a practical guideline for webfilmmaking in 2001 and could be adapted to become more relevant for current webfilmmaking (2005).

6.2.5. Summary

The three manifestos for webfilmmaking provide an interesting insight into the view on webfilms in 2001, in the aftermath of the dotcom crash and amidst the blossoming of the academic discourse on new media. This context is interesting as the discourse of the new influences all three manifestos in different ways. Kronschnabl and Rawlings argue in their pluginmanifesto that the new technologies will enable a new, more democratic and pioneering webfilm ‘movement’ as alternative to the dominance of Hollywood films. Bennett on the other hand contends that there are no such things as films or video on a computer. For him, the new aspect of moving image on both computers and the Internet is that films cease to exist and become a subcategory of software instead. Lastly, the anonymous author of the Dogma 2001

manifesto asserts that the Internet is a unique new exhibition platform with specific requirements for the films shown. Her or his manifesto is designed to provide practical guidelines to help filmmakers participate in creating 'true Internet films'. The principal problem with all three manifestos is the fact that they are largely informed by the discourse of the new, which was the predominant view on computers and especially the Internet at the time (2001). This discourse overshadows the manifestos inasmuch that at times the authors are actively looking for something new rather than perhaps similarities of the new medium and older media. Kronschnabl as well as Bennett base their manifesto on assumptions and future possibilities of what webfilms *might* or *should* be, rather than what they are. Kronschnabl argues that webfilms by definition should be artier and more unconventional, while Bennett reasons they should be or will be more like software. Such assumptions are fine as a theoretical observation or a possible look to the future; however, both Kronschnabl and Bennett incorporate it as the main argument of their respective manifestos which results in a very specific view that is, similar to the function of traditional film manifestos, more ideological than based on what is happening at the time.

With regard to the form and aesthetics of webfilms, the three manifestos similarly put forward different views. The main point of contention here is the length of films. Kronschnabl argues that the form and length of short films is prescribed by technological constraints such as Internet connection speed, bandwidth, and equipment. Bennett on the other hand contends that the form of short film is caused by the psychological context of the medium and user environment of a computer, which prescribes an active user. This active user and the accompanying form of short film for Bennett is diametrically opposed to a passive viewer of feature films on TV and in the cinema. The anonymous author of the Dogma 2001 manifesto considers both technological constraints and the viewing context of a computer and concludes that both these factors make the form of short films an ideal container for films on the Internet. The form of short film, for the author, is suited best to what s/he perceives as the limited attention span of Internet users. While all authors agree that the best container for webfilms is short film, there is little discussion of the aesthetics

and style of webfilms. One of the reasons might be that the writing of the manifestos is primarily influenced by the idea of a movement (pluginmanifesto and Dogma 2001), spawned by the discourse of the new. Thus, the aesthetic observations are in line with observations of technology, while negotiations with technological limits serve as a foray into aesthetics. For example, Dogma 2001 recommends that something interesting happen within the first ten seconds, in order to keep a viewer's attention. It could be argued that this recommendation is not specific exclusively to webfilms but that it is found similarly in ordinary short films, since short films have no structure of 'beginning, middle and end' like feature films, but are based mostly on a condensed story or a dramatic situation. Similar to a webfilm, then, a non-Internet short film needs to capture its viewers from the beginning. However, the viewing context of the Internet and computers facilitate a user with limited attention span; therefore, it is more urgent in webfilms to engage users faster and more effectively. The issue of attention span, according to Bennett, also prescribes that films should be short – a point that Kronschnabl and Rawlings attribute to the technological context of low bandwidth. Indeed, the pluginmanifesto as well as the Dogma 2001 manifesto assert that the aim of style and aesthetics of webfilms is to keep the data rate low, in order to facilitate distribution and transmission. In live action webfilms, stylistic devices to achieve this are as follows:

	Good	Bad
Camera Shots	Close-up, extreme close-up, medium shot	Long shots
Camera Movement	Static shot, use of tripod	Panning, Dolly, Zoom, handheld camera
Movement	Slow action, little movement	Fast movement
Characters	Talking heads, few characters in frame	Many characters in frame, overloading frame
Action	Slow action, little happening	Fast-paced action; many

	simultaneously	things happening at once in the same frame
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Table 3: Suggested good and bad practice with regard to webfilmmaking to counteract technological prescriptions, particularly low bandwidth.

The webfilm manifestos thus propose to take into account technological constraints with Kronschnabl arguing that such consideration should be part of preproduction. In the pluginmanifesto in particular, the authors argue to incorporate the limits of bandwidth and use them to produce a form and style for webfilms specifically informed by technological limits. This is in line with the authors' underlying claim for a new, original film movement.

Overall, the function of the manifestos within the webfilm network is twofold. On the one hand, human agents use them to influence a 'webfilm movement', creating a discourse of webfilms. Here, human agents are system builders trying to exert power within the network. On the other hand, the manifestos also function as inscription material for non-human agents within the network. Bandwidth, hardware and software prescribe certain shots, camera movement, etc. The manifestos' focus on technical rather than creative aspects of webfilmmaking illustrates the power non-human agents exert by means of discourse. Lastly, the manifestos also signify the power struggle within the network. That is, the suggested good and bad practice for webfilmmaking, i.e. 'good' and 'bad' shots, demonstrate the struggle of human agents to counteract the constraints and prescriptions by non-human agents.

The manifestos were mostly relevant at their time of writing. With hardware improving very rapidly and new broadband speeds of 24MB promised in the UK by the end of the year (2005), the technological prescriptions will weaken and non-human agents will lose their position of power within the webfilm network. Thus, there is scope for a redistribution of power and change within the network, which simultaneously invalidates the manifestos' central defining characteristic: that technology prescribes the filmic form of webfilms.

6.3. From Beginnings to Dotcom Crash: Early Webfilm and New Forms (1997-2001)

6.3.1. Films Made for the Internet

The webfilm manifestos discussed above are textual practices with the aim of creating what they appear to reflect. They are a unifying attempt to create a 'webfilm culture' and discourse. While there is no common terminology to denote 'webfilms', all three manifestos deploy a definition of webfilms that is informed by one main characteristic: the films are *made for the Internet*. This understanding of webfilms is mainly influenced by technological actors and the view that limitations encourage creativity or a specific aesthetics, thus generating a new filmic form:

When I first conceived of the site [The New Venue], films on the Web were mostly poorly digitized versions of movies made for another medium. I created really the first site to show movies that take advantage of the limitations of the medium and work around them and hopefully tell new types of stories...I think there's an evolving aesthetic. There are areas in which the technology comes into play and becomes integrated into the storytelling. To present video on the Web, you need to keep file sizes down. One way to do that is by shrinking the image or reducing the frame rate. A filmmaker can circumvent the limitations of the Internet by using still images. Rather than 30 frames per second as in regular film, filmmakers have to reduce their work to 15 [frames per second] or even one frame per second. It's interesting to see how filmmakers can integrate that into their work.

(NYC24 2000)

That is, webfilms in the narrow sense of the word are distinct from short films merely using the Internet as their main means of distribution¹¹⁷ Since the common denominator shared by all webfilms in this definition is that they are made specifically for the Internet, this aspect quickly became a property of family resemblance. As the number of webfilms in this period was relatively small, there was no need to distinguish or categorise them any further. Instead, family

¹¹⁷ The latter became much more common in the second phase of webfilms, which will be discussed in chapter 6.4.

resemblance was the basis on which webfilms took on a genre-like quality.¹¹⁸ Secondly, technological prescriptions of new media in the form of hardware and software limitations in this form were unique to webfilms; therefore, the combined resulting characteristics were constitutive, at least discursively, of a distinct category.¹¹⁹ As illustrated in case study one, aspects such as slow Internet connection speed and inferior hardware and software influenced the size and quality of webfilms. These technological agents, then, helped constitute the category of early webfilm through their prescription of common constraints and the related generic creation of a ‘Made for the Net’ film category, accompanied by a discourse of webfilm as a new filmic form. The following chapters look at manifestations of early webfilm culture and discourse (1997-2001) by first considering exhibition venues and webfilm festivals, before analysing some early webfilms and their aesthetic and formal qualities in more detail.¹²⁰

6.3.2. Exhibition Venues and Webfilm Festivals

The Sync (1997-2001) started out as a company providing live and on-demand Internet broadcast solutions. Part of their web presence consisted of an Online Film Festival, arguably one of the first Internet film festivals, with the purpose of “allow[ing] viewers worldwide to see independent films that would otherwise have limited exposure” (Internet Archive – The Sync 1998). Starting in early 1998, the festival was ongoing and viewers could vote any time, any day. There were seven sections (Animation, Documentary, Experimental, Comedy, Less Than 1 Minute, Narrative, Made for the Net) and the winner of each category was determined each month after which the votes were reset. New films were added on a monthly basis. Films were generally offered in three different versions: RealVideo 28.8k, RealVideo 56k, and RealVideo 112k and viewers chose films according to their connection

¹¹⁸ The question of genre and family resemblance is discussed in more detail in 6.4.3.

¹¹⁹ Technological constrictions on film form and aesthetics are nothing new – in very early film (1895 - 1910), the length of the reel prescribed the length of the film. This is because most cinemas only had one projector; thus, single-reel production was standard, prescribing the length of the film to 12-14 minutes. Additionally, since cameras and projectors were hand-cranked, the speed of the films often varied. For additional information on early cinema, see Elsaesser and Barker (eds.) (1990).

¹²⁰ While it was difficult to find examples of early webfilms still exhibited online, one site nevertheless has proved invaluable and all of its early webfilms are still available online (<http://www.newvenue.com>). The films analysed will all be from that site.

speed.¹²¹ This was particularly important for online screening of offline films, since those films had not been made with the Internet as exhibition medium in mind. Webfilms in the narrow definition of the word were represented by the category ‘Made for the Net’:



Figure 4: Logo of ‘Made for the Net’ category on The Sync website.

The category contained 16 webfilms, four of which were animations and the rest live-action webfilms. While the webpages of the festival and all categories still exist live on the site, the films are no longer accessible. The links to Real Media files remain; however, there is no connection to the server. Stills of the ‘Made for Net’ category indicate a relatively high degree of pixelation and the majority show close-up or medium shots.¹²²



[RealVideo 112k](#)



Proctological Exam- a humorous experiment in uncomfortable fingers, by John Milne, 1 minute



[RealVideo 56k](#)



Badness Interactive- the guys from Badness are back for an interactive adventure, by Tyler Myer, 12 minutes.

¹²¹ 28.8K is a slow dial-up modem, 56K is a normal-speed dial-up modem, and 112K is dual 56K and approximately the speed of an ISDN connection.

¹²² The entire table of the ‘Made for Net’ category was copied over from <http://www.thesync.com/festival/madefor.html>. The author contacted the site owner to ask whether it was possible for her to view the ‘Made for Net’ – films. She suggested to the site owner to either reactivate the server they were hosted on and alternatively asked whether the site owner could email some of the webfilms to her. Unfortunately, she did not receive a reply (12/2005). It was impossible to find copies of these early webfilms anywhere else on the web.



[RealVideo 112k](#)



Stop Looking- an experimental video poem, by John Milne, 2 minutes.



[RealVideo 28k](#)

[RealVideo 56k](#)



Mr. Giraffe- a show down between Mr. Giraffe and the grey turtle neck, by Nicholas Georgopoulos, Craig Antolick, Jeremy Bryant, and Peter Olson, 1 minute.



[RealVideo 28k](#)

[RealVideo 56k](#)



Locomotive- a father uses a computer to explain locomotives to his young son, 2 minutes.



[RealVideo 28k](#)

[RealVideo 56k](#)

[RealVideo 112k](#)



The Lesson- a man's spirit downloads information during a guitar lesson, by BigKid Productions, 1 minute.



[RealVideo 28k](#)

[RealVideo 56k](#)

[RealVideo 112k](#)



Bad Dreams- 4 out of 5 guys agree that women are crazy, by BigKid Productions, 1 minute.



[RealVideo 28k](#)

[RealVideo 56k](#)



The Retards Clean Up- an odd tale of janitorial mishaps in the style of a silent film, by Anthony Reed, 8 minutes.



[RealVideo 56k](#)

[RealVideo 112k](#)



Cheese Wars 5- bet you never thought cheese could be a threat, by Arc Roland, 6 minutes.



[RealVideo 56k](#)

[RealVideo 112k](#)



Cheese Wars 6- Meet Bunny the Brie Slayer, by Arc Roland, 10 minutes.



[RealVideo 28.8k](#)

[RealVideo 56k](#)



The Thin King- The Second Coming of Christ seen through flashes of visions, by Almar Ingason, 6 minutes.






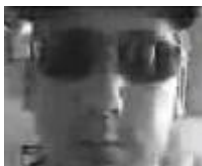




	RealVideo 28.8k		Mxartiste- by mx, 1 minute.
	RealVideo 28.8kbps RealVideo 56kbps RealVideo 112kbps		Badness -you don't need an amplifier to rock, by Badness, 30 minutes.
	RealVideo 28.8k		My Love -A Young Man finds true love in a cold place at the end of a poetic journey, by Bryan Souders, 1 minute.
	RealVideo 28.8k RealVideo 56k		Screen Memory -Have you ever wondered about the functionality of dreams? By Jamie Jamison, 3 minutes.
	RealVideo 28.8k RealVideo 56k		Shark -A short stop motion animation of technology versus nature, by Kelly Gregory, 6 seconds.

Table 4: ‘Made for the Net’ category on The Sync website pasted from original html source, containing stills and short summary of all 16 webfilms showcased on the site.

The Sync furthermore ‘broadcast’ webshows such as *Snackboy* (1998-2000, 422 Episodes) and *Computer Stew* (1999-2000, 372 Episodes), the former a daily diary of host Terry Crummit, the latter a comedy show broadcast in collaboration with ZDNet. The Sync website is still online; however, many of its hosted films are no longer accessible. The site financed itself primarily through Internet advertising and at its peak had 200000 unique users per month. In March 2001, the president of the Sync, Thomas Edwards, explains how its company will survive the aftermath of the dotcom crash despite the demise of many web video sites:

This is obviously a tough time for Internet video content companies with the demise of some high-profile sites. We are looking to bring on new popular websites as content partners and are also examining some possibilities of creating an enterprise content channel that

reflects our Internet-centric and fun outlook...The failure of many original content sites has hurt the industry," he said, "but it is ready to spring back in 2001. As music companies work out deals with MP3 aggregators, I expect the dominoes in Hollywood to start toppling. There has been a lot of resistance to encode existing quality content and put it on the Net. During the next 12 months, I expect that to go away, and you will be able to download movies to your digital video recorder at home over DSL. But there will still be a need for Net-aware content, and we plan on making The Sync a major player in that space.

(McMahon 2001b)

However, like many other web video providers, the site did not recover after the dotcom crash. The little advertising the site contained was insufficient to keep it afloat. The Sync remains a pioneer for early web-specific content, particularly its web shows, the first online film festival, and 'Made for the Net' content.

The New Venue (1998-2001) was the most complete undertaking to create cinema for the web with a focus on webfilms in the narrow sense – films made specifically for the Internet:



Figure 5: One of the logos on The New Venue website.

Its founder and host, Jason Wishnow, created The New Venue initially from a grant from Stanford University in 1996 and later partners included Dfilm and Apple. The online version was officially launched in April 1998 as "the first showcase dedicated to movies made expressly for the Internet" (The New Venue n.d.: 'About' section). As early as 1998, the site reported 10000 visitors per week (Prüfer 1999). To this day, The New Venue not only contains an archive of 51 webfilms from a period of three years (1998-2001) but also interviews with webfilmmakers and background information to each film. In an interview from 1998, Wishnow explicitly aligned webfilmmaking with early cinema:

[Movies on the Web] are sort of like those old Kinetoscopes at the turn of the century, the ones where people would kneel down and

look into the five-and-dime...It was an effort to see it, but it was still very exciting just to get that moving image. People would pay their nickel and go and watch it over and over and over again. At the time, it was sort of this bastard art form, and proper theater directors wanted nothing to do with [it]. Right now, you've got the modern equivalent of that, and a whole lot of creative underground filmmakers making stuff.

(Savlov 1998)

He argued that too many filmmakers simply uploaded a compressed and small-scale version of their existing film onto the web, ignoring the specifics of the medium with its limitations such as low frame rate and small window size, which he in turn saw as an artistic and creative challenge, leading to specific webfilm aesthetics:

When you look around the Web, ...you'll see things that have been shot on Super 8 film or on video, things designed for the big screen or the television that have been scaled down. My approach here was twofold: one, to have a site that would show movies for the Web, and two, to address the issues of how movies could be made specifically for the Web. In doing that, we're addressing the limitations you have with multimedia content over the Internet and then how you can meet those head-on and use the limitations as a generative strength.

(Ibid)

This focus on the Internet's technological prescriptions and their influence on the aesthetics of webfilms is a recurring theme in the interviews with webfilmmakers.¹²³ Alongside the screening and archiving of webfilms, The New Venue furthermore consists of a section called 'FlickTips' which served as a toolbox for webfilmmakers. The aim was to assist regular filmmakers to make a transition to webfilms, but also to give new webfilmmakers a chance to learn and subsequently submit their webfilms to the site, thus contributing to and proliferating webfilm culture. In 2001, the latest addition was a competition to create webfilms for the mobile medium of a handheld computer (PDA), with a resulting 69 films specifically made for the PDA platform.¹²⁴ Soon afterwards, however, The New Venue stopped being updated and no new content has been added since October 2001, when the last webfilm (*Total*

¹²³ The interviews with filmmakers are part of the New Venue Movie Archives (The New Venue n.d.: 'Archives' section).

¹²⁴ See chapter 5.2.6.

Control) was screened.¹²⁵ Overall, The New Venue was one of the most accomplished webfilm sites with a clear mission to promote webfilm as a new aesthetic form of film, on par with early filmmaking that similarly used technological constraints creatively. However, in the aftermath of the dotcom crash and the absence of any viable business model, The New Venue, like many other early sites showing video and webfilms, did not survive.¹²⁶ Nevertheless, the entire site remains online and all content is still accessible and ‘live’. The New Venue thus remains an invaluable source for early webfilms.

The Bit Screen exhibited webfilms between 1998 and 2001. Its original URL (<http://www.thebitscreen.com>) has been dead since 2003 (‘Cannot find server or DNS Error’). Some of its content, however, is archived in the Internet Archive and accessible by typing its URL into the ‘Wayback Machine’.¹²⁷ This research method is not ideal – not all of the site’s past content, including most webfilms, is accessible. It is still possible however to trace The Bit Screen’s significance in the network of early webfilm culture. Nora Barry, a US-based specialist in interactive media, started the Bit Screen in 1998. Like The Sync and The New Venue, The Bit Screen focused on the new cultural form of webfilms - films made for the Internet, as illustrated by the site’s logo (archived at: Internet Archive – The Bit Screen 2000):



Figure 6: Logo of The Bit Screen website.

¹²⁵ As part of the research for this thesis, the author had subscribed to the New Venue mailing list. In August 2005, an email from thisweek@thenevenue.com stated “The “New Venue” remains on indefinite hiatus” (The New Venue (thisweek@thenevenue.com) 2005).

¹²⁶ Chapter 7 discusses in more detail the ways in which economic factors, specifically, the dotcom crash, turned into a powerful agent within the webfilm network.

¹²⁷ The Wayback Machine is discussed in more detail in 3.4.3.

Produced by Druid Media (<http://www.druidmedia.com>), the site regarded the web as an entirely new medium, resulting in a necessity to create new content:

The Internet's a new medium, and it demands new content - which is exactly what you'll find on The Bit Screen. The Bit Screen delivers first-run Internet films and web series directly to your desktop.

(Internet Archive – The Bit Screen 2002)

The Bit Screen showed four webfilms each week and its program changed on a weekly basis. The best films showcased on the site subsequently moved to be screened as 'Best of Bitscreen' on <http://www.broadcast.com/video>, a streaming media site owned by yahoo. The Bit Screen also produced an Internet film festival ('Streaming Cinema'), where webfilms were exhibited offline, which will be discussed separately in the next section. It is interesting to note that The Bit Screen at no point seemed to have had any significant means of independently generating revenue. There was some banner advertising on the site, but no other visible forms of income. The website launched in June 1998 and the weekly screening began in January 1999, ending in July 2001. Similar to Jason Wishnow, Nora Barry compared webfilms to early film and the Cinematographe. Lumiere films and webfilms, according to her, had in common that the image was dark and relatively low-quality, while the technology in both cases prescribed the picture:

Ms. Barry has seen Lumiere films that run from 30 seconds to maybe two minutes. "Bit Screen films run anywhere from two to seven minutes," she said, "but within that time frame each pushes the boundaries of the technology and expands or changes the way the story is told."

(Nichols 1999)

Both The Bit Screen site itself and the 'Best of Bitscreen' section on the yahoo site have ceased to exist and it has been impossible to retrieve any of the webfilms screened on the site. However, there are some screenshots and a brief description of *1000 Moons* (1999), one of The Bit Screen's first films. The film is described as "a beautiful young woman reveal[ing] her transcendent experience of intimate, erotic

ecstasy” (Stringer 1999). The screen shots show an actress talking to a camera in what appears to be a monologue (Ibid):



Figure 7: Still image 1 from online video 1000 Moons (1999).



Figure 8: Still image 2 from online video 1000 Moons (1999).



Figure 9: Still image 3 from online video 1000 Moons (1999).



Figure 10: Still image 4 from online video 1000 Moons (1999).

Similar to the remaining screenshots of webfilms on The Sync, the images show a high degree of pixelation and the shots chosen are medium close-ups. The composition of *1000 Moons* is reminiscent of a talking head newsreader. While the screenshots cannot give an accurate representation of the actual webfilm, they are a good indication of its overall style and in this case illustrate the preference for close-up shots, as well as the high degree of pixelation characteristic of early webfilms.

Streaming Cinema Festival (2000-2003), today merely a domain name for sale, was an Internet film festival produced by The Bit Screen. Its aim was to screen webfilms offline:

Streaming Cinema is a festival of web cinema: films, video, animation and multimedia programs created specifically for the Internet...[it] takes online films and screens them in an off-line environment. Why? Because there's a lot of beautiful, innovative work being done online - work that deserves to be critically examined. And the best place for that kind of viewing is still off-line festivals and museum venues.

(Internet Archive – Streaming Cinema 2001)

In its first year, Streaming Cinema's definition of webfilms was little more than an emphasis that the films were made specifically for the Internet, which was replicated by its logo:



Figure 11: Logo of Streaming Cinema website.

In 2002 (Streaming Cinema 2.0), the definition of webfilms and Streaming Cinema's mission statement had become more specific with the claim that "It isn't film anymore" (Internet Archive – Streaming Cinema 2002). It was argued that webfilms were the result of the new medium, which determined a new form of film shaped by the Internet. Consequently, webfilms were no longer films:

From the earliest nickelodeons on through the introduction of sound and color and continuing today with the emergence of digital video, cinematic form has always been shaped by the technology of the medium. This is equally true for Internet films. Their form is shaped by the fact that the Internet is a digital, interactive, upstream/downstream medium. And that makes Internet films completely different from cinematic films.

(Ibid)

These new forms, according to Streaming Cinema, were characterised by a “new language of visual storytelling” and “a new style of motion pictures” (Ibid), resulting in multiple versions of a story, more fluidity, and ease of multiple authorship due to the Internet as medium of communication and distribution. Streaming Cinema’s 2002 statement concluded that the effect of these new forms of film had already had an impact on mainstream filmmaking:

These films are laying the foundation for what visual storytelling will look like 10, 20, 100 years from now. Their impact is already being felt: "Time Code", "Run Lola Run" and even "The Pillow Book" all incorporate elements of web filmmaking. The Golden Age of net films? We think so, which is why we created Streaming Cinema.

(Ibid)

The discourse of the new thus penetrated Streaming Cinema’s self-definition in a theory of webfilms reminiscent of Manovich’s ideas of new media as possessing a specific new language. By 2003 (Streaming Cine 3.0), the bold claims about webfilms that are no longer films had disappeared from the ‘About’ section of the site. The focus had widened and webfilms or net films were no longer the festival’s central focus. Instead, it had been replaced by the more general ‘digital media’ category:

This year's Streaming Cinema will focus on the impact of digital media on cinematic storytelling, specifically, emerging visual and narrative formats made possible by digital media.

(Internet Archive – Streaming Cinema 2003)

Unfortunately, it has not been possible to view any films that formed part of the Streaming Cinema festivals, to critically assess the claims about new forms and ‘non-films’ that are made as part of the site’s statements. Crucially, however, the purpose of the exercise was to illustrate the relevance of the discourse of the new to a major early webfilm site and to show how the concept of ‘films for the Internet’ changed within this discourse. Streaming Cinema festival screened eight times in three years in the cities of Philadelphia, Boston, Lisbon, Seoul, Linz and Amsterdam

(Druidmedia n.d.: ‘Production’ section). After 2003, the festival stopped and subsequently its website disappeared, following the demise of its producing site, The Bit Screen.

Catatonic.net (2000-2001) was a small, short-lived site that is listed here mainly to illustrate the existence of a webfilm terminology at the time. The site (<http://www.catatonic.net>) is currently (2005) a placeholder (“This Site is Under Construction and Coming Soon”). There is little information about the site using a standard search engine such as Google and only a few pages are listed on the Internet archive. Catatonic.net defined itself as the “Home of independent and underground webfilm” and this is represented by its logo (Internet Archive – Catatonic 2001):



Figure 12: Logo of Catatonic.net website.

The site’s purpose was to exhibit alternative webfilms and it had “resources, an online film fest and tools for the independent filmmaker” (Ibid). The number of webfilms exhibited on the site was low, and the site’s design had an amateurish feel. Overall, Catatonic.net was never a serious competitor compared to other sites and has not had any lasting effect on webfilm culture and discourse, apart from the fact that it is the only site deploying the term ‘webfilm’ to describe films made for the Internet.

6.3.3. Early Webfilm Analysis

There is only a small number of early webfilms still accessible on the Internet – the great majority of sites have shut down and ceased to exist, following the dotcom crash. Furthermore, the Internet Archive does not store moving image media. The source for all webfilms discussed below is the site The New Venue which has an online archive of 51 films that were made specifically for the Internet. The aesthetic and formal qualities of these films will be examined and the extent to which technological actors influenced early webfilm form.

The webfilms from 1998-1999¹²⁸ are characterised by various strategies of the films to keep their file size down. That is, all early webfilms work with the limitations and prescriptions of technology (low bandwidth, low-quality hardware and software) resulting in a number of common conventions and specific aesthetic and formal qualities. The table below illustrates the most common strategies to reduce file size: length, frame size, frame rate, and audio:

Webfilm (Year)	Length	File Size	Frame Size	Frame Rate	Audio
<i>Alfred</i> (1998)	00:59	4.87MB	160x120	7.5FPS	Stereo, 22050kHz
<i>Big Daddy Cool</i> (1998)	01:01	4.38MB	120x90	11.74FPS	Mono, 22254kHz
<i>Consensual \$ex</i> (1998)	01:38	4.8MB	160x120	7.5FPS	Mono, 11025kHz
<i>Cosmo Tells All</i> (1998)	00:26	1.29MB	340x255	6FPS	Mono, 22050kHz
<i>Craze South Ozone</i> (1998)	00:54	3.5MB	180x135	7.5FPS	Mono, 22050kHz
<i>Driving PSA</i> (1998)	06:25	3.68MB	320x240	8FPS	Mono, 11025kHz
<i>I'm Home Part</i>	01:13	4.56MB	144x108	15FPS	Mono,

¹²⁸ The films discussed in this section, as well as all other webfilms discussed later on in this thesis, are referenced with their online location in the Reference section of this thesis. For reasons of copyright, they cannot be provided on a CD-Rom.

<i>I</i> (1998)					22050kHz
<i>Momma</i> <i>Tryptich</i> (1998)	00:30	1.76MB	144x108	15FPS	Mono, 22050kHz
<i>Persona</i> (1998)	01:32	3.82MB	160x120	8.5FPS	Mono, 22050kHz
<i>Windows 2001</i> (1998)	00:39	2.64MB	160x120	10FPS	Mono, 22050kHz
<i>Know Your</i> <i>History</i> (1999)	01:08	737.4KB	240x120	10FPS	Mono, 11127kHz
<i>Video War</i> <i>Leverage</i> (1999)	02:33	5.1MB	240x180	12.01FPS	Mono, 11025kHz

Table 5: Strategies to compress webfilm file size: Reduction of film length, frame size, frame rate, and audio quality.

The first noticeable point is that all but one film are very short, with a typical length between 30 seconds and 1:30. The film's length is crucial to its file size. Any longer webfilm such as *Driving PSA* (6:25) is highly unusual and the exception rather than the rule for early webfilms, and the film suffers more than the other ones from very low quality due to high compression. The shortness of the films means that there is typically no room to develop a story or a plot and the choice of subject matter is driven by questions of compression and bandwidth and therefore by technology.¹²⁹ Thus, there are a number of 'talking heads' films that relate a 'slice-of-life' (*Persona*, *Big Daddy Cool*), or containing a brief statement (*Know Your History*). The very short form furthermore lends itself to visual experiments with a focus on visuals

¹²⁹ This lends itself to a comparison to early film as mentioned in an earlier footnote. It could be argued that early webfilms are similar to early films in the way in which their subject matter is influenced by technology. In early cinema (1895 - 1910), film was determined by the length of one reel, which prescribed a film length of 12-14 minutes. This length arguably lent itself to a subject matter of 'cinema of attractions' rather than narrative cinema. For more information, see Gunning (1986) and Elsaesser and Barker (eds.) (1990).

rather than a story (*Alfred, Craze South Ozone*). The one exception to this, *Driving PSA*, is a spoof of a driving safety video and has a plot that compares two drivers (one good, one bad) who end up crashing into one another due to the bad driver cooking while driving.

The second central aspect of early webfilms is their frame size, i.e. the intended viewing size of the picture. It is relatively small with 160x120pixels the average:



Figure 13: Still image from online video *Persona* (1998). Frame size 160x120.



Figure 14: Still image from online video *Big Daddy Cool* (1998). Frame size 120x90.

The average frame size is half the size of today's webfilms, which average at 320x240. The small frame size means that the close-up shot (and, to a lesser extent, medium shot) features prominently in most early webfilms. Close-up is the most visible shot for the audience with regard to details, mood, and action – a long shot is generally not suitable for this very small screen, as it makes it difficult to determine the action. Furthermore, close-ups, especially talking heads, compress better. This is because there is less movement and as a result, minimal difference between one frame and the next. Consequently, close-ups are more suited than medium and long shots if the aim is to keep file size down. As a result, all the webfilms involving actors contain mostly close-ups or headshots, and occasionally medium shots (*Consensual Sex; I'm Home Part I*) to take best advantage of the small frame size and of optimum compression.

The third aspect of early webfilms is frame rate. Frame rate refers to the number of frames displayed per second. For example, cinematic films run at 24 frames per second (FPS), while traditional cel animation typically runs at 12FPS. The number of frames is crucial for fluid movement and a visual sense of continuity and the lower

the frame rate, the less smooth and fluid the image. However, frame rate is another area where the file size of a webfilm can be reduced. The early webfilms have a frame rate from 6FPS to 15FPS, with an average of 10FPS, which is less than traditional cel animation. The result is less fluidity and instead a high amount of flickering, with an often jerky picture especially when filming movements (*Consensual Sex*) or more complex patterns. Most of the early webfilms of 1998-1999 avoid excessive movement and a film that does not is an experimental take on riding a motorbike. Here, the jerky movements and overall blurring become an aesthetic strategy (*Craze South Ozone*):



Figure 15: Still image from online video Craze South Ozone (1998). 7.5FPS.

The final factor to influence early webfilm aesthetics is audio. Audio is a good way to limit a webfilm's file size, as it is here where a high degree of compression can be applied with comparatively less loss in quality. Not surprisingly, all but one webfilm of the period 1998-1999 have mono sound and not stereo, with a low average Hertz rate of 22050kHz. The audio of the webfilms is most often spoken words (voiceover or character narration) with little or no background sound, and tends to be a monologue. The absence of dialogue is not surprising, given the absence of plot and the predominance of talking head subject matter or experimental short films.

Overall, the webfilms on The New Venue site in the period of 1998-1999 were characterised by form and content that was heavily prescribed by technological factors. The result was a set of aesthetic conventions and formal qualities, not all of which were necessarily used in each webfilm but which served as guideline and common practice. These conventions include a predominance of close-ups, followed by medium shots and the absence of long shots. There was typically only one

character speaking in monologue, with little or no background noises and no other characters or dialogue, and the action was mostly static, relying more on dramatic narration rather than showing any dramatic action. The exception to these conventions was found in experimental webfilms. Here, the limits were used creatively, for example, by focusing on movement, thus foregrounding pixelation and jerky visuals due to low frame rate. The colour of these films was often monochrome or black and white, since high colour differentiation and the presence of many different colours would inflate file size. Of the 12 webfilms viewed, the most engaging webfilms were *I'm Home Part I* and *Momma Tryptich*. Here, the makers achieved to tell an interesting story and create suspense within the constraints of the medium, even while using mainly close-ups/medium shots, one person talking, and with relatively confined movements. The focus on slice-of-life was well executed and the close-up shots achieved a dramatic character insight in the form of facial expressions. The least successful webfilm was the over 6-minutes-long *Driving PSA*. It was badly affected by all technical constraints (low frame rate, high degree of pixelation, jerky movement). The film is an example of not taking into account any of the Internet's limitations at the planning stages. It was initially produced for tape output and later simply shrunk for exhibition on the Internet.

The 7 webfilms from 2000 and 2001 are characterised by a move away from some of the strict constraints of 1998 and 1999. The films are generally longer and the file size and frame size is often larger. This is partly because some of the constraints no longer apply as strictly as before. The increase of streaming as a preferred technology to showcase videos on The New Venue site similarly has resulted in a loosening of the strict technological prescriptions of the previous two years. There is an increase in animated webfilms shown on the site, which are mostly not discussed for the purpose of this thesis. The remaining webfilms from 2000 and 2001 are listed below:

Webfilm (Year)	Length	File Size	Frame Size	Frame Rate	Audio

<i>51 Seconds</i> (2000)	00:51	8.1MB	240x180	14.56FPS	Stereo, 41000kHz
<i>Buddha Bar</i> (2000)	00:50	2.5MB	160x120	7.5FPS	Mono, 22050kHz
<i>Buena Vista Fight Club</i> (2000)	01:50	12.46MB	360x240	7.5FPS	Stereo, 41000kHz
<i>Coin Laundry</i> (2001)	06:44	13.2MB	540x400	15FPS	Mono, 41000kHz
<i>Cursing The Gulls</i> (2000)	01:20	9.76MB	320x240	10FPS	Stereo, 41000kHz
<i>Sperm Tragedy</i> (2000)	05:27	7.6MB	100x75	7.5FPS	Mono, 41000kHz
<i>The Blue Ocean</i> (2000)	02:55	687.81KB	100x75	1.0FPS	Mono, 22050kHz

Table 6: List of live-action webfilms on the New Venue website in the years 2000-2001.

Most notably different to the previous two years, there is now a move away from a more specific webfilm form and style. While *Buddha Bar* uses close-ups as stylistic device and *Coin Laundry* is very static (little camera movements, few cuts, very slow-paced, close-ups and medium shots), there is otherwise little the webfilms have in common. The general tendency of the films is increasingly visual and experimental, and most mix animation into live action in some way:



Figure 16: Still image from online video *Buena Vista Fight Club* (2000).

There is less dialogue and the audio is of better quality. It appears mostly as a soundtrack to the visuals – i.e. monologues of a character to the camera and ‘talking heads’ are no longer predominant. Alongside more visual material, there is also more storytelling due to the longer running times. *The Blue Ocean* follows a young man who seemingly commits suicide, while *Sperm Tragedy* is a mostly puerile story of a sperm trying to make its way to the Uterus (live action mixed with a great amount of animation). Some of the webfilms (*51 Seconds*; *Coin Laundry*; *The Blue Ocean*; *Cursing the Gulls*) look like they could be projected onto a big screen – they no longer have anything marking them exclusively as web-specific. The sentiment that webfilms may no longer be Internet-exclusive is echoed in some of the interviews accompanying the films. In one, a webfilmmaker speaking about their film *Buena Vista Fight Club*, states:

Technically and aesthetically, it [Internet cinema] has matured. We are no longer satisfied with seeing something made just for the web. Now we expect to see the film digitally projected in front of a huge audience at high resolution. When I run out of ideas, I will probably go back to some of my earlier films and clean up all the roughly bleeding bluescreen edges and pixelation so they will look better on the big screen.

(The New Venue 2000)

That is, webfilms are in the process of exceeding their ‘Made for the Net’ category, and, while in 2000 and 2001 there are still webfilms in the narrow meaning of the word, the definition of webfilms is changing. There are a number of reasons for this; the most obvious is the changing influence of technological actors such as software and bandwidth within the network. The increased use of streaming technology means

that absolute file size is no longer as big a concern as in the early years. The resulting decreased importance of a strict artistic and aesthetic framework informed by technological constraints makes it more difficult to retain an exclusive category of webfilms. With this opening of form and style, there are no longer sufficient grounds for a significant differentiation between short films made for the Internet and short films made for other media, and indeed short offline films later exhibited online. By 2001, a site such as The New Venue with its focus on movies made for the Internet has lost its purpose and it now stands merely as webfilm archive. Overall, after initial struggles to create webfilms as a new filmic form, by late 2000, aided by the dotcom crash, webfilms have lost some of their aesthetic and formal qualities. The artistic movement based on films made for the Internet has been greatly undermined by a decreased power of technological agents within the webfilm network. This change will be discussed in more detail below.

6.4. After the Dotcom Crash: Short Films on the Web and New Content (2002-2005)

6.4.1. Short Films Distributed on the Internet

The configuration of webfilms as a new filmic form, defined by being made exclusively for the Internet, failed due to a combination of economic and technological reasons. However, webfilms did not simply disappear following the dotcom crash. While most sites closed down,¹³⁰ those with workable business models (mainly iFilm and AtomFilms) continued to show both webfilms and short offline films online. The discursive formation of webfilms as a new film form had peaked with the webfilm manifestos in 2001. However, the definition of webfilm as a new form of film made specifically for the Internet largely disappeared¹³¹ after 2001 and merged into the category of short films on the web. There were a number of reasons for this: Firstly, the disappearance of sites dedicated to webfilms (such as The New Venue and The Bit Screen) resulted in a decrease of exhibition platforms and thus

¹³⁰ AtomFilms' CEO Mika Salmi claims there were hundreds of AtomFilms competitors between 1999 and 2001, but none between 2002 and 2004 (Salmi 2004).

¹³¹ An exception, French net artist and webfilmmaker Systaime, will be discussed later.

iterations of webfilm culture. This largely economical factor, influenced by the dotcom crash and the resulting withdrawal of funding for Internet venues, was joined by a definitional problem concerning webfilm discourse. Changes in technology, in particular, increased broadband penetration in Western countries, together with the widespread use of streaming technology for web video, undermined one of the central premises of webfilm as new film form: the need for a reductionist aesthetic due to technological prescriptions such as bandwidth and hardware. This was not however an immediate development. In 2001, the majority of home users were still on slow dial-up modem connections and broadband uptake was slower than expected, especially in the UK (Orton 2002; Websiteoptimization 2005). However, the possibility for fast Internet connections and the prevalence of such connections in many public contexts (for example, at Universities and in the workplace) meant that some of the core webfilm audience (University students; workers during their breaks) as well as prosumers were already aware of the huge possibilities of short entertainment on the web as showcased on sites such as AtomFilms and iFilm. Given that it was only a matter of time before broadband penetration overtook dial-up modem technology, it was clear that an exclusive web aesthetic based on constraints was likely to become redundant. Another contributor to the demise of webfilms as an exclusive new film form and movement was the increase of video content generally, including newscasts, trailers, ads, funny clips and home movies. Moving image was no longer a small, exciting new form created only by pioneers with specialist technical knowledge but instead, as hardware and software improved, it was easier for anyone to produce and exhibit moving image. Since then, video content on the web has continued to rise with a new peak during 2005 in the form of video blogging. In 2001, then, the discourse of 'webfilm' as a new film form was slowly beginning to lose its defining characteristics. It is suggested here that the discourse of webfilms after 2001 changed to incorporate short films that use the Internet as main means of distribution and exhibition. This definition focuses more on new and niche content that is made possible by a short film that does not require traditional offline distributors and thus does not have to pass gatekeepers in order to find exhibition space. The new genre of webfilm is thus defined as a short film made with the Internet as main distribution and exhibition medium in mind; often containing niche

content. There is no longer a differentiation between ‘old’ webfilm and ‘new’ webfilm – rather, old, web-exclusive films can be considered a subcategory of new webfilms. The innovation and characteristics of webfilms are now to be found primarily in its content rather than its form. The following section gives an overview of webfilms with a focus on the popular content that is significant and characteristic of many webfilms today. Since the sites of webfilm exhibition have increased greatly in recent years, no attempt will be made to analyse any of the exhibition sites in more detail. Instead, the overview in a previous chapter shall suffice; here, the development of one of the biggest players in (new) webfilm shall be briefly traced as an example of a site surviving the dotcom crash. Subsequently, the genre of webfilms and the new content of short webfilms will be discussed.

6.4.2. A Dotcom Survivor: AtomFilms (1998 – present)

iFilm and AtomFilms are two well-known survivors of early webfilm sites. Briefly introduced earlier, the reason for their survival is a more flexible approach and a number of transformations, away from webfilms only and to offering multimedia content in a variety of genres, coupled with a business model that does not rely on sponsorship as its main means of income. Websites that did derive the majority of their revenue from sponsorship were unable to continue in the aftermath of the dotcom crash, when most sponsors, realising the absence of a profitable business model, withdrew their money across a wide variety of online businesses of which webfilm sites formed only a small part.¹³² Doyle (2002) illustrates that the problem facing all new media sites following the dotcom crash was what traditional media, in particular, broadcasting were long familiar with: how to generate revenue from their content. The problem was that, up until the dotcom crash, there was no established model as to how to derive revenues from distributing content over the Internet. While popular discourse suggested a free-for all, equal Internet, the reality of the costs involved in creating and maintaining an online product were not as low as generally imagined.¹³³ Both iFilm and AtomFilms from their inception did not merely rely on showcasing webfilms as a means in itself, while using solely sponsorship as means

¹³² For further reading on the dotcom crash, see Kuo (2001), Malmsten, Portanger, and Drazin (2001), and Cassidy (2002).

¹³³ Her example is that the online version of the *New York Times* until recently required 400 staff to produce.

of finance. The case of AtomFilms shall be analysed in more detail as an example of an emerging Internet business model that ultimately guaranteed its survival and has become profitable after an initial period of heavy losses. From its inception, AtomFilms sought to generate independent revenue. The main means of finance initially were advertising and syndication. With regard to advertising, banners were not only placed on the site but also integrated with the films watched in the form of 'commercials' screened before a short film started with no possibility for users to turn it off or 'jump' straight to a film. Since AtomFilms purchased the rights to all short films exhibited on its site, a second strand of income was derived from syndicating content to airlines, cinemas, TVs etc. Around the time of the dotcom crash (2000-2001), two significant changes occurred. First, in 2000 AtomFilms merged with Shockwave.com (<http://www.shockwave.com>), an online gaming portal, to form AtomShockwave. This increased the number of registered users to 30m, with access to over 150m users (Guardian Unlimited 2000b). The rise in registered users is significant for the subsequent change in business model, which focused on the audience as a saleable good to advertisers. Doyle (2002) argues that registration facilitates online businesses' sale of their audience to advertisers, as it is an easy method to 'prove' audience numbers and characteristics such as gender, age, employment, etc. From 2001 onwards, AtomShockwave, similar to traditional offline media firms, started to rely increasingly on advertising revenue as its main source of income,¹³⁴ though CEO Salmi admits that the business model was still relatively weak (Salmi 2004). Following the merger, AtomShockwave had now around 2m unique visitors per month. In the period of 2001-2005, AtomShockwave has continued to grow, first becoming profitable in 2002. Salmi argues its current success is a result of technological progress and more quality content, resulting in an increase in audience with subsequently more advertising revenue:

The business has dramatically changed the past year. First, the advertising business, especially video ads, has perked up considerably. In addition our audience has grown, partly due to

¹³⁴ The most elusive and strongest currency in regard to audiences is that of 16-34 year-old males, which are considered those with the most disposable income and are therefore most sought after by media firms. However, particularly within television, it is increasingly difficult to target this audience. Shows such as *Top Gear* are one successful example.

increased broadband penetration but mainly because of strong content like the JibJab animations, Angry Kid Series 2, Mock the Vote stuff, Little Ninja, and many others. We are now around 8 million unique visitors per month. Strong advertising and broader reach are opening up new ways for us to approach the business and have made us even more "legitimate" than before.

(Ibid)

Overall, AtomShockwave's method to develop its business has centred mainly on increasing the audience as saleable product, creating an increasingly strong currency. The company's latest acquisition (in November 2005) was the online gaming site Addicting Games (<http://www.addictinggames.com>), bringing audience numbers up to 30 million per month (5 million AtomFilms, 20 million Shockwave, 5 million Addicting Games) (Schonfeld 2005a). Following the acquisition, AtomShockwave changed its corporate name to Atom Entertainment. The name now serves as umbrella term for the various online entertainment brands, where AtomFilms is Atom Entertainment's brand for short film and animation (Atom Entertainment 2006). Overall, then, AtomFilms' strategy to survival after the dotcom crash was to continually modify and innovate its business model, generating revenue from advertising, sponsorship, e-commerce, subscription, and distribution of its content. The growth of AtomFilms' Internet audience via mergers has been central to its creation of a strong currency for advertisers. After 7 years in business, AtomFilms, starting out as a site exhibiting webfilms, is now (as Atom Entertainment) the largest privately held online entertainment company (Schonfeld 2005b).

6.4.3. Webfilm Genres and Categories

In the period of early webfilm, films were not specifically differentiated according to genre. Instead, the term 'webfilm' itself served as a container with generic-like functions: to separate and differentiate against offline film, and to establish itself as a new category and new form of film. Additionally, there was a relatively low number of webfilms on the respective sites (4 at a time on The Bit Screen, 16 in total on The Sync, 51 on The New Venue, accumulated over a period of three years) which meant that further classification was not required. However, with the widening of the webfilm category to include offline films distributed online and the resulting increase of webfilms and webfilm sites, it is necessary to address the question of webfilm

genre. Classifying webfilms according to genre is problematic for a number of reasons. First, the definition of 'genre' is a contested area within Film Studies and thus the theory of films (or 'texts') itself. Traditionally, genre is a means to categorise films according to shared conventions of content (themes or settings) and/or form (structure and style). However, Neale (1990) points out that there are other approaches such as the concept of 'family resemblance', first coined by the philosopher Ludwig Wittgenstein. In this case, similarities between films form the basis for their genre categorisation. An example of this is the 'horror' film - no particular quality is necessary for a film to be horrific. However, horror films can be classed as a genre using the concept of family resemblance, in that all horror films induce a basic experience of fear, the realisation of which can differ considerably.¹³⁵ There are a number of other definitions of genre, often depending on the purpose and context of investigation, a further discussion of which is beyond the scope of this thesis.¹³⁶ Neale (Ibid) stresses the importance of historicising generic definitions, thus placing them in their socio-historical context, rather than treating them as isolated, non-changing aesthetic regimes. He also foregrounds the often-overlooked economic context of especially popular genres:

...mass-produced, popular genres have to be understood within an economic context, as conditioned by specific economic imperatives and by specific economic contradictions – in particular, of course, those that operate within specific institutions and industries. That is why it is important to stress the financial advantages to the film industry of an aesthetic regime based on regulated difference, contained variety, pre-sold expectations, and the re-use of resources in labour and materials.

(Ibid: 468)

For Neale, genres are far from isolated aesthetic categories. Instead, the institutionalised, public discourse on genres with its system of expectations is economically necessary and the indication of relevant generic characteristics is vital

¹³⁵ Horror films vary considerably in form and style, as illustrated by the difference in the following examples from five decades: *Psycho* (1960), *The Texas Chainsaw Massacre* (1974), *Hellraiser* (1987), *The Blair Witch Project* (1999), *The Ring* (2002).

¹³⁶ See Bordwell (1989), Stam (2000), and Neale (1980) for further reading on Genre in film studies.

for film industry publicity, marketing, and advertising. Thus, within institutional discourse, the following categories are often classified as genres:

Action
Adventure
Comedy
Crime/Gangster
Drama
Epics/Historical
Horror
Musicals
Science Fiction
War
Westerns

Overall, any discussion of webfilm genres has to be considered within existing discourse on film genres and in particular, the problem of genre classification and the differences of public genre discourse and theoretically or scholarly based discussion of genre. Another problem in classifying films according to genre is that a number of categories are more difficult to classify as genre or generic. These are the category of animation (which refers to a film technique, rather than a genre in the traditional sense), documentary, and home movies. Given that especially the animation category forms a great part of the webfilm corpus, in classifying webfilms, a traditional institutionalised approach to genres is insufficient.

Sites showing webfilms, either as their main focus (AtomFilms), or as part of their overall online entertainment offer (iFilm, Kontraband) deploy genres or categories relatively freely, depending on whatever suits the focus of their entertainment portal best. iFilm for example has 12 entertainment channels, one of which is a short film channel with the following subcategories:

Animation
Best of 2004

Claymation
Comic Book
Edgy Comedy
Fan Films
Horror
Lego
LOTR
Matrix
Movie Spoofs
Star Wars

Kontraband, a UK-based online entertainment portal showcasing webfilms alongside other forms of online entertainment such as games, has the following crude categories for films:

animations
TV ads
movies
home movies

Some sites such as Undergroundfilm (<http://www.undergroundfilm.org>) have no immediate categorisation of their films, making site and film navigation difficult:

Featured Films
All Films
Highly Rated
Recent Additions

The opposite tendency is to create a long and detailed list of genres, practiced by Canadian online portal site ZeD – Open portal television (<http://zed.cbc.ca/go?c=homepageV3>). The site has two categories related to short films, ‘Animation’ and ‘Film and Video’, and the Film and Video category alone has 24 ‘sub-genres’:

Action
Adventure
Biography
Bumper
Comedy
Commercials
Dance
Documentary
Drama
Educational
Experimental
Fantasy
Film Noir
Hand-Made
Horror/Suspense
Musical
Music Video
Parody
Puppetry
Romantic
Science Fiction
Western
World
ZeD Logos

In the categorisation of films on webfilm sites there are two main tendencies. One is to categorise films according to specific offers of the site itself, with little emphasis on traditional genre categories. This is true mostly for sites where the main focus lies not on webfilms but where it is more on entertainment in general, and webfilms form just a small part (for example Kontraband). Often, these portals do not have the exclusive rights to the films broadcast and revenue is not derived from the films themselves but from advertising and/or subscriptions. Here, identification with

existing film genres is less relevant since alignment with the film industry is of relatively little economic importance. On the other hand, sites such as AtomFilms structure their identity on being online cinema: “AtomFilms is where the Web goes to watch movies, providing on-demand viewing of over 1,500 world-class animations and short films” (AtomShockwave n.d.). For these sites, adhering to traditional genre categories according to institutional discourse is an economically important decision. A categorisation that aligns itself with traditional film industry categories facilitates publicity, marketing, and advertising. Overall, there is no coherent classification of webfilms provided by sites exhibiting webfilms. For the purpose of analysis, it is therefore necessary to attempt a classification and categorisation independent of what the various websites prescribe.

For the reasons discussed above, it is difficult to discuss webfilm genres without reference to the discourse on film genres and their position within the film industry and popular culture. Nevertheless, it is useful to attempt a categorisation of webfilms, with the aim of especially illustrating potential differences to traditional film culture and newly popular forms relevant to the medium. Following Williams (1984) cited in Neale (1990: 467), the starting point for classification is a reduction of conventional film genres to three basic categories – that of narrative film, experimental film, and documentary. On this basis, certain subgenres can be identified and allocated to their respective head category. However, this classification is not meant to be exclusive; instead, webfilms forming part of a genre share certain elements that are dominant but not necessarily exclusive. The genre of narrative is where most innovative webfilm content has appeared. Two examples of newly popular subgenres are parody (also referred to as ‘spoof’) and fan films, and there is a new category in the form of viral commercials. The documentary genre is underrepresented and this research has found little content and no Internet-specific themes. Similarly, there is little Internet-specific experimental content with the exception of French web artist Systaime which will be discussed in 6.4.5.

Before analysing some of these newly popular subgenres, it is necessary to revisit the problem of webfilm definition. At the time of writing (2005), there are no webfilm sites showcasing only films that were made specifically for the web, with an Internet

audience and this production and exhibition context in mind. Instead, the majority are short film sites that may or may not contain films made exclusively for the Internet. A good example of a short film site is the BBC's Film Network site (<http://www.bbc.co.uk/filmnetwork/>) which exhibits over 150 short films with the aim of "showcasing and connecting new British film talent" (BBC Film Network n.d.: 'About' section). While it is possible to submit a film using an online form, the majority of films were made offline and the main purpose of the site is to provide a network for new filmmakers and connect them to the industry.¹³⁷ In general, however, it is often impossible to determine which of the films on this site and others have been made specifically for the Internet, and which ones were originally made for offline distribution and exhibition but have turned to Internet exhibition for greater and easier exposure. Overall, what all webfilms in the definition deployed here have in common is that they take advantage of the distribution platform of the Internet without necessarily having been made *specifically* with the Internet in mind. Nevertheless, for many of these forms the web is the most obvious exhibition platform. This is partly due to the poor infrastructure for short-film exhibition and distribution outside the festival circuit. Rarely can webfilms be purchased 'offline', for example on compilations. When discussing some of the newly popular categories of webfilms, it is therefore important to bear in mind that, what the films have in common is not that they were made exclusively for the Internet, but instead, that the Internet provides their main means of distribution and exhibition. Since this definition is rather general and inclusive of most moving image on the Internet, it is necessary to exclude certain online video from the definition of webfilm used in this thesis. Thus, before analysing some examples of current webfilm culture, it is initially necessary to illustrate what kind of web video is excluded from a definition of webfilms for the purpose of this investigation.

In 2000, moving image in the form of either streaming or download video on the Internet was a relatively new occurrence and the main form of web content consisted of still text and images. This was primarily due to bandwidth and technological prescriptions as analysed earlier in this thesis. Thus, when discussing webfilms in September 2000, *The Guardian* journalist Kate Stables defined it as "the broad and

¹³⁷ Unsurprisingly, the films showcased are organised in recognizable genres and categories: Drama, Comedy, Documentary, Animation, Experimental, and Music.

varied swathe of moving-image entertainment which is viewable on the Internet either via streamed video or downloadable files” (Stables 2000). Since then, however, there has been an ever-increasing quantity of moving image on the Internet and moving image and numerous new forms have appeared, particularly in the last two years (2004-05). It has therefore become necessary to explicate the definition of webfilms used in this thesis and to, below, exclude certain forms of “moving-image entertainment” from this definition. These forms include home movies, re-edits, TV clips, music promos, video blogging, and graphic and visual art.

Home movies are defined as “Moving image material, the subjects of which are personal or family events, usually filmed or recorded by an amateur [sic]” (The Library Corporation 1997-2001). The widespread use of digital video cameras, webcams, and the rise of mobile phone video cameras has resulted in an ever-increasing number of amateur videos and clips that can easily be uploaded to the Internet. The infamous ‘Happy Slapping’ videos, where young people film the criminal act of beating someone, before distributing it to other mobiles, is only one well-known example. The Internet is awash with ‘funny’ clips with no clear intent or purpose and sites such as Kontraband encourage people to send in ‘funny virals’ and home movies. Home movies are excluded from the definition of webfilms deployed in this thesis because they are amateur clips that tend to be poorly executed and often coincidentally funny.¹³⁸ They do not adhere to any filmic conventions and are often not edited. Examples of home movies include the previously discussed *Star Wars Kid* (2002).

Re-edits refers to clips that are edited versions of existing clips. The manipulation of clips has become easy and fast due to the availability of free movie editing software and considerable improvements in hardware and software. Re-edits are popular as they reference existing well-known images, including TV clips and commercials. Well-known examples are re-edits of speeches and TV appearances by US president Bush and other political figures, mocking their command of language, facial expressions and their politics.¹³⁹ Two well-known UK re-edits were mock-ups of

¹³⁸ Often, home movies resemble clips shown on TV programs such as *You’ve been framed*.

¹³⁹ See Camp Chaos (n.d.) for examples.

popular TV commercials e-sure (featuring Michael Winner) and of cleaner Cillit Bang. Infamous viral videos are similarly the subject for re-edits – there are to this date 106 re-edits of the *Star Wars Kid* (2002) video.¹⁴⁰

TV clips are simply extracts from a TV show that have been recorded to a harddrive and subsequently compressed and uploaded to the Internet. The clips are often funny or shocking and circulate the Internet in viral form; however, entertainment portals such as iFilm also show a great number of TV clips. A well-known example of a TV clip that found widespread viral distribution is one of comedian Sacha Baron-Cohen (2004) performing a highly anti-Semitic song (*Throw The Jew Down The Well*) in his Borat character to a US audience that enthusiastically sings along.

There are a number of web videos, exhibited on sites such as AtomFilms that were made with the intention of promoting a band. These music promos use the Internet as their main means of distribution and exhibition. They tend to be funny and sometimes include an element of parody. Examples include the supposedly third daughter of President Bush, Flora Bush, with the song '*Get Out of Iraq*' (*and My Room*) (2005) and a spoof of Lord of the Rings called *Lords of the Rhymes* (2004).

Videoblogging (also called vlogging or vblogging) and mobile phone blogging (moblogging) have particularly been on the increase over the last two years (2004-2006). Videoblogging refers to the activity of creating a personal diary featuring personal content:

A vlog or video blog is a blog (short for weblog) which uses video as the primary content; the video is linked to within a videoblog post and usually accompanied by supporting text, image, and additional meta data to provide context.

(Wikipedia n.d.o.)

There are numerous vlogging sites and vlogs are increasing rapidly, partly a result of technological developments and new media such as Apple's iPod video. Vlogs can contain anything but usually feature personal and amateur videos.

¹⁴⁰ See Jedimaster.net (n.d.) for re-edits of the *Star Wars Kid*.

Graphic and visual art denotes all high-quality digital moving image that is typically intended for the big screen and other media viewing. One well-known example is the onedotzero digital moving image festival (<http://www.onedotzero.com>). Graphic and visual art can also be found in music videos or on film art sites such as cinematicfilm (<http://www.cinematicfilm.com>) that showcase experimental film and video art. These films have in common that they were not made primarily for web distribution and exhibition, but use the Internet as an additional means of distribution.

6.4.4. Webfilm Culture: Narrative Webfilms

The spoof or parody film is one of the most popular webfilm subgenres. It functions as a quick response to world events, either of a political nature (for example, Saddam Hussein's trial; the Bush-Blair relationship) or of media and entertainment (Hollywood films, TV shows, songs, commercials). Harries (2001: 282) defines the parody by its propensity to challenge the stability and conventions of film genres: "Film parody functions by taking pre-established and fairly stable semiotic structures (such as genres or the work of a particular director, or even a widely viewed single film) and recontextualizing the structure through the oscillation between similarity to and difference from the targeted text". Within film theory, the parody plays with conventions of films and its forms of representations. With regard to webfilms, the frame of reference can be anything from popular culture to current events and news, as well as TV shows, films, and music videos. A subcategory of parody webfilm is fan film, which will be discussed further below. There are a number of reasons for the popularity of parody webfilms. Firstly, unlike ordinary short films, a parody already provides a frame of reference and thus a degree of familiarity. Given the competing of many other applications in a computer screen environment in what is often a busy domestic context, this popular frame of reference provides increased motivation for people to watch a webfilm. Parodies play with a user's expectations, thus creating an interest and comic effect with a result of immediately engaging her or him. That is, the rule that something interesting need to happen in the first 10 seconds, as put forward by the anonymous author of the Dogma 2001 manifesto is provided for by familiarity. Additionally, parody webfilms often have a comical

effect, mocking their subject matter and satirising popular culture or current world events. Lastly, parody is an ideal prosumer genre, providing a satirical response by a consumer-turned-producer of popular culture. Overall, parody is the ideal subgenre for webfilms, given that its content and form by definition already engages with users and that it furthermore provides an ideal container for prosumer culture. Examples of parody webfilms include spoofs of films (*The Legend of Anders Pants* (2000); *Nerd Club* (2001)), TV shows (*1140 Minutes* (2004); *The Sith Apprentice* (2005)) and fictitious spoof trailers (*12 Hot Women* (2003)).¹⁴¹

Fan films are strictly speaking a subcategory of parody; however, they are here discussed separately as they constitute a distinct subculture with its own discursive formations and a unique following. They are defined as

...an offshoot culture of independent digital filmmaking. Fan films feature the characters, settings or premise of popular genre properties in stories that audiences will probably never get to see on the movie screen or television.

(Wen 2000)

Fan films have in common that they mainly spoof science fiction films, the great majority of which is related to the *Star Wars* franchise. Since this category is greatly dominated by *Star Wars* fan films, the focus of analysis will be on this franchise, though it is conceivable that other 'cult films' will develop a similar fan film following.¹⁴² The first fan film of the *Star Wars* franchise appeared in 1977 with the release of the spoof *Hardware Wars* (1977). This 12-minute-film was a simple spoof of the first *Star Wars* film using household appliances for spaceships, shot on an \$8000 budget (Calhoun 2002). A second attempt, arguably spawning the 'modern' fan films, was *Troops* (1997). 10 minutes long, *Troops* was the first fan film to use the Internet as distribution medium. Its success, despite its size (30MB), was its considerable production values due to the wider availability of computer special effects and technical progress, combined with high quality costumes of fans used in the film, giving it a professional look. Following the cult success of *Troops*, the

¹⁴¹ The reason for the omission of political spoof and satire as well as spoofs of popular songs is that those are often realised using the animation software *Flash*. Since the focus on this thesis is on live action webfilms, animated spoofs have been omitted.

¹⁴² There are other fan films, for example, parodying *The Matrix*, *Star Trek*, *The X-files*, and others. However those are mostly much smaller communities without a wider cultural influence or following.

number of *Star Wars* fan films increased considerably. Jenkins (2001) argues that *Star Wars* fan film culture is a result of media convergence on the one hand and the increased possibility for consumer participation on the other:

Star Wars fan films represent the intersection of two significant cultural trends -- the corporate movement towards media convergence and the unleashing of significant new tools which enable the grassroots archiving, annotation, appropriation, and recirculation of media content. These fan films build on long-standing practices of the fan community but they also reflect the influence of this changed technological environment that has dramatically lowered the costs of film production and distribution.

The latest fan film success has pushed the boundaries of traditional short fan film. *Star Wars: Revelations* (2005) is over 40 minutes long and has high-quality special effects and a near-professional production. On a budget of \$20000, director Shane Felux has created a story that is set between Episode 3 and Episode 4 of the *Star Wars* saga using amateur actors. The film is non-profit and available for download on the director's site (<http://www.panicstruckpro.com>).¹⁴³ The central aspect to all fan films is that they are not made with commercial intent. Lucasfilm, the production company behind the *Star Wars* franchise, not only tolerate but also support non-commercial *Star Wars* fan films. In 2002, George Lucas himself started supporting *Star Wars* fan films by endorsing for the first time the annual Official *Star Wars* Fan Film Awards. Hosted by AtomFilms, the awards have a number of categories, one of which is selected by George Lucas himself (*George Lucas Selects Award*). Since 2004, Lucasfilm licensees have sponsored a number of awards. The continuous growth of the fan film genre culminated in a screening of *Star Wars* fan films at the 2005 Cannes film festival (Lucasfilm Ltd. 2005b). Overall, *Star Wars* fan films are the most significant example of prosumer films in what Jenkins (2001) calls a 'participatory culture'. The webfilms themselves vary greatly in form and content. There are silent films (*Silent But Deadly 2* (2003)), spoofs of other films (*Anakin Dynamite* (2005), *Sparring Program* (2002)), of TV shows (*The Sith Apprentice* (2005)), and self-contained offshoots such as a fictitious commercial (*Recruitment*

¹⁴³ For more information on *Star Wars: Revelations*, see Waters (2005), Wikipedia (n.d.p.), Panick Struck Productions (n.d.: 'About The Film' section).

(2004)).¹⁴⁴ Overall, fan film is one of the most prolific webfilm categories. While it is built on the existing subculture of fan communities, it is what Doyle (2002) describes as digitisation that is central to fan film culture's success. That is, technological actors (Internet as distribution and exhibition medium) together with economic ones (lower production cost) have been and continue to be the crucial driving factor of this category of webfilm.

Viral commercials, here defined as short commercial films made for the Internet, are the only genuinely new subgenre of webfilms. While parodies and their subcategory fan films have existed prior to the Internet, viral ads are the only webfilm category that comes close to the early definition deployed in this thesis: short films made exclusively for the Internet. However the reasons for web exclusivity are not technological or aesthetic; instead, they are of regulatory nature: most viral commercials are too risky and controversial and would fall short of broadcasting and advertising standards. Thus, the Internet here is chosen for its relatively unregulated nature and risky content is deployed as a strategy - to help create the 'buzz' central to viral distribution relying mainly on word-of-mouth. Viral commercials have in common their controversial subject matter. The most notorious examples are one for the Ford Sportka (*Sportka 'Beheaded Cat'* (2004)) and one for the VW Polo (*VW Polo 'Suicide Bomber'* (2005)). The Sportka ad shows a cat being beheaded by the sunroof of the car, while the VW Polo ad shows a suicide bomber blowing himself up in his Polo. The nature surrounding the circulation of viral ads is often controversial in itself, thus adding to the myth and buzz of the ad. For example, the VW ad was allegedly not intended for release but intended for the creators' showreel only. After the 'leak', they were sued by VW with a libel and cease and desist lawsuit and had to hand over the source material accompanied by a high-profile apology (Brook 2005; Computer Arts n.d.; WorldNetDaily.com 2005). While viral commercials have professional production values and are thus recognisable as such, there are a number of spoof viral ads characterised by a more amateurish production but often equally as controversial. One such spoof ad is for a Nokia camera phone, where a cat is stuck on a ceiling fan, swung around a number of times and then

¹⁴⁴ For *Star Wars* Fan Film online exhibition, see AtomFilms (n.d.b.) and TheForce.net (n.d.).

smashes against a wall (*Nokia 'Cat on Fan' Spoof* (2003)). Another example is a spoof ad for Mastercard involving explicit discussion of sexual activity (*Mastercard 'Indecent Proposal' Spoof* (2001)). While not all viral commercials are provocative, it is the notorious ones that get the most exposure, raising a brand's profile and achieving the desired effect. However, this type of webfilm is a risky strategy as viral commercials are always on the edge of potentially damaging a brand's reputation even while raising its awareness.

6.4.5. Webfilm Culture: Net Artist Systaime

French net artist Systaime (Michel Borrás) creates art webfilms with a focus on web-specific forms and aesthetics, thus taking up early webfilm's theoretical enquiry into films made specifically for the Internet. For Systaime, low-tech is constitutive of a specific new cultural form – webfilm. Unlike other current webfilmmakers, the artist furthermore uses appropriate terminology, i.e. the word 'webfilm' (or 'web-film') to describe his work. Similar to the viral commercials discussed earlier, Borrás' webfilms are made for the Internet in the near-exclusive definition of early webfilm. With a background in Fine Art, Systaime's webfilms have a theoretical framework and a distinct subversive agenda:

He is focusing on subversion of conventional media discourse. Incrustation and double exposure of images have at the same time, softness/violence and fascination/repugnance. For SYSTAIME of Michael Borrás, the web which is a virtual communication method is an excellent medium for image experimentation. Lowtech French Trash Touch" is an instinctive and subversive project which can make spectator become director of sensual film-making through hypnosis. Permanent flicker through channels. Systaime shows the medias' corrupting pictures which brings together softness and violence. Systaime is a Video-Shaman!

(Rivoire 2003)

Systaime's webfilms are showcased on his own website (<http://www.systaime.com>) with the first films dating from 2001, as well as on video community site Daily Motion and a compilation of his films has been released on DVD. A net artist, Systaime's webfilms form part of his overall artistic venture, with a very conscious subversive agenda. His films are characterised by a distinct low-tech approach,

which is a conscious aesthetic decision based on the influence of technology and computer code:

The exaggerated pixelation is not a coincidental technique, but an aesthetic choice. The artist mixes, compiles, clashes, deforms his materials in order to create new significations and lead the spectator with virtuosity and finesse to new sensations...Systaime also exploits the material by letting it preserve its own existence through utilising 'numerical accidents' (repeated encodings, bugs, the sound of breath...). These numerical constraints become an aesthetic choice.

(Ibid - author's translation)

That is, the artist has created an aesthetic influenced by computer code, reflected in his webfilms by a high degree of pixelation and other computer-specific aspects such as repetition, loops, and bugs, characteristic of computer code and programming language. Furthermore, Systaime's choice of strong primary colours such as yellow and red are reminiscent of the browser-safe palette. His filmmaking strategies include sampling from popular culture, particularly French TV, and he often films using a webcam. Subversion in Systaime's webfilms is reflected in filmic form, content, and theory. The subject matter of his webfilms often reflects on world events (such as the invasion of Iraq) and specifically French media and politics (the Paris riots) which are sampled and pulled apart using computer logic and form, to create highly artificial, pixelated, and distorted (sub)versions in strong primary colours. There are furthermore a number of collaborations including one with French musician Charlelie (<http://www.charlelie.com>) for whom the artist has created a number of music videos. Systaime's prolific work to date includes over 100 webfilms and he continues to produce them at a fast rate. The artist was also online juror for the Cinema4Net section of the SENEFF festival discussed earlier in this thesis. Overall, Systaime occupies a unique position within current webfilm culture. He is the only prosumer describing his work as 'web-film' or 'webfilm', and his filmmaking addresses issues of technological aesthetics and is informed by intellectual inquiry. In his work, Systaime actively pursues webfilms as a unique aesthetic form, and as such fits in with the theoretical framework of Kronschnabl's pluginmanifesto and its call for webfilm to claim back film-as-art.

6.5. Webfilm Culture and New Media Discourse

The findings of the third case study critiqued claims of new media's newness, particularly relating to its content and aesthetics. Lash (2002) argued that the content of all new media was information, containing descriptive presentations devoid of deep thought (see 2.3.1). While the form of new media may be informational due to its digitality, i.e. consisting of zeroes and ones, the investigation into webfilm culture showed that new media content was not by definition informational. Webfilms were not all created 'on the spot' and without reflection, ontological structures, or logical and deep meaning. Instead, webfilm culture was shown to be varied and containing not only information, but also, sociocultural categories such as narrative and discourse that Lash associated exclusively with old media. An example of the former, i.e. primarily informational online videos, was found in home videos or other 'funny videos' that were often created on the spot by webcam or mobile phone, and subsequently uploaded onto a website. Narrative and discursive forms of webfilms were found in parody films, and especially, in the category of Star Wars fan films. Here, the framework and concept was legitimate and thought-out, referencing other cultural forms and other media, and, in the case of the Star Wars fan film festival, creating permanent, non-contingent, non-accidental forms of cultural discourse. Intellectual inquiry into webfilms via the writing of manifestos and especially on early webfilm sites furthermore refuted Lash's claims that new media were by definition informational and contingent. On the other hand, his thoughts on the accumulative nature of new media proved insightful, particularly, regarding the latest online video phenomenon of video community sites such as YouTube and Dailymotion. In these cases, a culture of accumulation and 'adding on' is a central defining characteristic of such prosumer online video sites. The case study showed however that this culture of 'adding on' is not by definition informational. Instead, new media, here represented by webfilms, was a patchwork of all sociocultural categories including narrative, discourse, and information, and not exclusively 'new' or exclusively informational.

While Lash's theory of an informational new media culture was thus largely refuted, Bolter and Grusin's (1999) concept of remediation proved more insightful. As discussed in detail in 2.4.3, the authors argued that new media was a category in

interplay and intermediation with older media. Its 'newness' lay in the way it *remediated* older media. Remediation consisted of immediacy, i.e. an 'authentic', transparent style, and hypermediacy, a patchworked and fragmented style. The third case study illustrated that webfilms were indeed characterised by an aesthetic style that contained both aspects of remediation. On the level of content, most home videos were immediate and 'authentic', while hypermediacy and the mixing of styles and borrowing from other media occurred in other categories including fan films, re-edits, and art webfilms. The viewing environment of most webfilms furthermore was characterised by remediation, in particular, of old media. Webfilms often remediated the standard size of a 4:3 TV screen, while the buttons included in webfilm viewing remediated a VHS or DVD player. Overall, the case study illustrated that there was no specific aesthetics of new media. Instead, it confirmed Bolter and Grusin's argument that the new about new media, here, webfilms, was that they were characterised by a particularly high degree of remediation, an aesthetics that new media shared with TV.

Finally, the third case study shed a new light on Manovich's (2001) claims of a new language of new media. Discussed in detail in 2.4.2, Manovich's theory of a new, different new media authorship and resulting new media aesthetics was modified by the case study's findings. The great variety of webfilms analysed showed that there was no homogenous 'new media aesthetics', and in particular, not one based on a crisp-clear image that, as Manovich claimed, tried emulating 'cinematic reality'. As argued in relation to Lash's theory, various forms (discursive, narrative, and informational) existed alongside each other and were often in interplay and remediation. Contradictory to Manovich's theory, there was furthermore no unidirectional relationship of cinema influencing new media. On the other hand, old media's conventions such as camera angles, linear perspective, editing conventions were found in the majority of webfilms studied. Additionally, the third case study refuted Manovich's view that authorship was always based on selection and, as a consequence, non-original. There was no one circumscribed author of webfilms, and creation was not always based on selection. This was especially true of home videos that were often recorded 'ad hoc' on mobile phones or webcams and uploaded unedited. Such forms did not pass through any software-based selection or

composition process in the way Manovich suggested. The equation of selection with unoriginality was disproved by the creativity and originality found in many webfilmmakers' work, particularly, in that of web artist Systaime. Finally, this third case study refuted Manovich's claims that new media aesthetics were always characterised by excess of information across space. While many webfilms contained a high degree of remediation, only few films were characterised by aesthetics of spectacle and spatial patchwork. Such a style was prevalent in films that consciously dealt with computer and new media logic, for example, the distinct aesthetics of web artist Systaime's webfilms. An aesthetics based on spatial excess was thus more a result of a conscious intellectual and artistic inquiry, rather than a property of new media itself. Overall, the third case study refuted Manovich's central claim of a new, specific language of new media. It illustrated that, while there may have been discursive attempts to create such a new language within webfilm culture, this was not in fact found in the majority of webfilms analysed and viewed. Instead, the case study showed that webfilms, and thus new media, did not have an exclusive, new language and that all new media forms were not defined by the same aesthetics. Some additional results of the third and final case study are summed up below.

6.6. Summary

This third case study investigated the creation of webfilm discourse and webfilm culture and the ways in which both changed following the dotcom crash. The methodological approach was informed by Foucault's understanding of discourse and the aim was to map some of the discursive formations that made knowledge about webfilm culture possible. Thus, the analysis started by tracing three textual attempts at creating a webfilm movement through explicit writing of manifestos. It was shown that the webfilm manifestos, similar to traditional film manifestos, functioned mostly as intellectual and theoretical inquiry. While all three contained a 'call to arms', there was no real effect on cinema and no webfilm movement spawned by the manifestos. Furthermore, most of the practical guidelines, while forming a central part of the manifestos at their time of writing (2001), have become less relevant as hardware, software, and Internet connection speed have lost their prescribing power within the network. The overall problem with a webfilm culture

based on the premise of webfilm as new filmic form was that its definition was based on a reductionist aesthetic influenced by technological actors. That is, webfilm was defined as a new aesthetic form resulting from the technological constraints of hardware, software, and Internet connection speed. This emphasis on constraints with a necessary resulting innovation in form permeates the texts of early webfilm culture. It is found on early webfilm sites, their statements of purpose, and interviews with webfilmmakers (for example New Venue n.d.: 'Archives' section). The dotcom crash and its resulting withdrawal of funding for many webfilm sites, combined with improved and more affordable hardware, software, and bandwidth, had a number of effects on webfilm culture. The discourse of webfilms defined as films made for the Internet started to vanish due to the closure of webfilm sites and the improvement of digital actors. This thesis argues that, while the original discourse of webfilm thus disappeared, it was replaced by a wider definition of webfilms that focussed on innovation of content as opposed to innovation of form. This second phase of webfilms with its new definition is problematic in a number of ways. Most significantly, unlike early webfilm discourse, there are no texts supporting the argument of a webfilm culture based on innovation of content. There is no terminological framework of webfilms; instead, this phase is characterised by terminological discontinuities. Webfilms are referred to as netfilms, efilms, micromovies, netmovies, and other terms. In addition, the great increase of short films and moving image content on the Internet over the last few years makes it difficult to differentiate 'webfilms' from short films and other moving image forms such as videoblogs and home movies. It is argued here, however, that there is a continuation of webfilm culture with unique and identifiable characteristics to the films that are based on two aspects. Firstly, the aforementioned innovation in content, and secondly, a distribution and exhibition that is nearly exclusively online. Contributing to the formation of webfilm discourse, this thesis analysed some examples of what it considers the second phase of webfilm culture (2002-2005). It was found that the most common genre were narrative webfilms. The films were characterised by innovation in content in that all shared an immediate visual and thematic impact. In the webfilm forms of parody and (Star Wars) fan films, this impact was provided by a familiar frame of reference that immediately engaged prosumers. In the new form of viral commercial, it was provided by shock value and

risky or controversial content. A notable exception to the second phase of webfilm culture was the unique position of net artist Systaime. Systaime in his webfilmmaking explicitly carried on both terminologically and theoretically the intellectual inquiry into webfilms as new filmic form reminiscent of early webfilm culture. His aesthetics however were not informed by actual technological constraints; instead, his was a conscious decision to engage with the language of computer culture. Using the logic of sampling, repetition, loops, and pixelation, his webfilms echoed Manovich's 'language of new media'. Overall, however, Systaime's work was an exception and influenced not only by film culture but also by his overall artistic practice as well as other media work including that as VJ (video jockey). Further discussion of the findings of this second case study and its actor-network analysis is provided in 7.1.

The future of webfilm discourse and culture is difficult to predict. The notion of a filmic form prescribed by technological constraints has recently been taken up by mobile phone films. For example, the Nokia Shorts Competition in 2005 for the first time included a category for films made using mobile handsets. The 'tips for making a movie' on the site are reminiscent of early webfilm discourse:

Some hot-shot film-makers will probably try out making a movie on a mobile phone, and try to make it look like film. Isn't that crazy? Wouldn't the real challenge be to play around with your camera and see if you can use its limitations to the fullest of their creative potential?

(Nokia UK and Raindance Festival 2005: Section 'Tips for making a movie on a mobile phone')

This illustrates that a definition of film based on technological constraints was not unique to webfilm culture and discourse. It served instead to provide an initial common frame of reference for filmmaking on the Internet at a time when the occurrence of moving image online was rare. With the decrease of power of many technological agents and the increase in online video, the field of webfilms is now much larger and varied. It remains to be seen if and how online video and specifically webfilms are redefined and discursively reformed. One indication of change is signified by the recent announcement (in January 2006) of an online studio

by AtomFilms. With AtomFilms Studio, the site plans to produce original content for Internet delivery, that is, films made specifically for Internet exhibition (Atom Entertainment 2006; Associated Press 2006). While the aesthetic form of this new 'webfilm' is unlikely to be influenced by technological constraints, the form and content of these online-specific films may nevertheless provide another change and challenge to webfilm culture and discourse.

7. Discussion

7.1. The Webfilm Networks Reconsidered

The aim of this research was to study how webfilms came into being and evolved over a period of 9 years (1997-2005). Actor-network theory (ANT) served as theoretical basis for investigating the complex evolution of webfilm, and it helped understand how and why it took on the form that it is today. This shaping of webfilm as a media form was investigated before and against a background of the shaping of new media as a discipline of study. The study and understanding of new media was intimately tied to the object of study, its methodology, and its author, and formed an essential theoretical starting point and framework for the investigation. The actor-network approach allowed selecting various networks and zooming in to relevant nodes of analysis to further the understanding of the webfilm's trajectory. The advantage of ANT was that it minimised differences between human and non-human actors, enabling the research to focus instead on the networks and the position and influence of their various actors. By de-emphasising traditional subject-object dichotomies, the actor-network methodology enabled an analysis of how the interdependent actors including technology, humans, companies, interest groups, and the larger social, economic, and occasionally political aspects interacted and how they changed over time.

The three networks selected for analysis were artificial inasmuch that they did not represent three different and independent units of analysis; instead, they formed part of an overall web of which the webfilm was but one node. Depending on its co-actors, the webfilm took on different roles and functions, and the purpose of isolating three different networks was to illustrate these various roles, thus providing a thick description of the processes in and with which the webfilm emerged and changed over time.

Network one was guided by the first research question of this investigation: How are non-human actors involved in the creation of a specific form of media (webfilm)? It dealt with the nuclear ensemble of prosumer and technology. The aim here was to

investigate the immediate production and consumption context of webfilms in form of the relationship of human, hardware and software, and bandwidth, describing the actors involved in webfilm prosumption at this micro-level. The findings were that technological actors played a key role in shaping the evolution of webfilm and it emerged only after negotiation with these actors. The study confirmed the ANT viewpoint that a media form, here represented by webfilms, cannot be understood as a discrete and independent object that is created by an equally independent and separate human subject. The concept of creativity as original process of creation, where a human author determines a work of art, was unable to explain the multiple interactions that formed part of the webfilm's evolution. Instead, the creation process involved complex negotiations with other actors especially hardware and software. It is here where Manovich's theory of creativity as a matter of selecting from predefined software menus (see 2.4.2.) proved insightful. While his equation of the operation of selection with a loss of originality was problematic due to its inherent deterministic approach (technology determining human action), his understanding of software as inscribing actions onto human agents was highly relevant. This research suggested that webfilm creation involved an ongoing interaction of prosumer, hardware, software, and bandwidth, where agency alternated between technology and prosumer. The resulting product, the webfilm, was therefore a compromise, inscribed by both human and non-human agents, rather than an intended outcome created in a unidirectional manner by a subject-author. The limitations of the first network emerged in the writing process of this thesis over time. By the time this research was nearing its end, the power of technological actors described in the micro-network of the first case study had declined and shifted somewhat. Within the UK webfilm network, webfilm production and consumption had become more independent of the strong technological prescriptions initially experienced. Technological actors had thus begun to become invisible. A brief spell in the Italian countryside quickly put the decreased importance of technological actors into perspective. There, the power of technological actors was far greater than in the UK and so the overall approach of ANT to describing a new media phenomenon still held strong, putting a slightly different perspective onto the evolution of webfilm by increasing the importance of geographical and economic actors.

The second isolated network was guided by the second research question: How did 'webfilm' arise as (new) form of film? To this purpose, it investigated the webfilm's strategies of visibility, specifically, in the areas of distribution and exhibition. The focal point here was the wider context of the webfilm's trajectory and the actors it recruited in order to stabilise itself across various distribution channels. Some of the technological actors involved in this network, particularly bandwidth but also hardware and software overlapped and were highly intertwined with the first network and were therefore excluded from analysis. Instead, the focus was on traditional actors pertaining to the area of film distribution and exhibition. The specific template used in the case study was that of film studies. This approach was chosen in order to map differences in traditional and new media distribution, with the aim of contributing to and reflecting on these central aspects of the discipline of new media studies. The actor-network approach was useful in illustrating the different strategies and negotiations the webfilm entered in order to stabilise itself over time. For example, in the case of distribution via file-sharing and exhibition on a personal homepage, the familiar micro-network of prosumer and technology described in the first case study was central to a successful circulation of webfilms. With regard to web portals and web entertainment sites, other actors came into play, prescribing rules and regulations into webfilms. These included submission guidelines, legal requirements (to protect site owners against copyright violations), and quality control, thus shaping a webfilm's form and content in accordance with commercial interests. The webfilm entertainment sites were themselves actors in different networks and were largely prescribed by other commercial actors, relying on visitor numbers in order to create a saleable product for advertising revenue. Furthermore, legal actants were of central importance to the evolution of webfilm and its distribution. Intellectual property laws prescribed that webfilms were mainly exhibited as streaming files only, with no obvious way of downloading them onto prosumers' own computers. This meant that it was not possible to view a webfilm a second time without having to revisit the site screening it and being exposed to often-large amounts of advertising. Other legal actors included copyright but also privacy laws, as illustrated by the case of the *Star Wars Kid* (2002) short film and its continuing distribution and exhibition despite the threat of a lawsuit. Webfilms

furthermore sought to recruit actors that were outside Internet distribution channels. The ANT approach helped trace these ‘offline’ alliances and describe the discontinuities and the failure of some of them, in particular, early mobile exhibition, and distribution via VHS video. It also showed the increasing influence of commercial actors from other media firms, in particular, makers of mobile media such as Sony (PSP) and Apple (iPod video). Towards the end of the research period covered (2005), two significant shifts within the distribution and exhibition network had occurred. Firstly, the decline in importance of technological agents facilitated by better and cheaper hardware and software, and improved bandwidth had enabled an increase in moving image content on the Internet. While this had produced more channels of distribution for webfilms, for example in the form of video community sites, it simultaneously increased moving image competition in the form of home movies, webcam sequences, music videos, and (often offline) short funny films made available for the Internet. That is, any strategic alliances and relationships with agents previously formed were destabilised. For webfilm to survive, it would require a strengthening of the alliance with agents of distribution and exhibition specifically relating to webfilm as a distinct form of film. However, the increased difficulty of webfilms to retain any defining qualities (as films made specifically for the Internet) was demonstrated by the changing definitions and statements of purpose of formerly Internet-only film festivals. These findings provided the pointer and incentive for investigating the change in webfilm discourse and culture in the third case study, which is discussed further below. The second shift in the network of webfilm distribution and exhibition was the aforementioned increasing interest of commercial actors and offline brands. The purchase of short film entertainment brand iFilm by MTV Networks in October 2005 and the release of Apple’s iPod video, combined with the sale of short films through the iTunes store, pointed towards a shift in power towards commercial offline actors. It furthermore illustrated the interrelationship and convergence of new media and media, thus contributing to the theory and discourse of new media.

The third network zoomed in to the creation of webfilm discourse and culture. Guided by the second research question, ‘How did ‘webfilm’ arise as (new) form of

film?', the case study investigated the discursive construction of webfilm. The focus was on human agents of the network and the study followed their attempts at recruiting co-agents to form an alliance, thus translating webfilm as a new film form. The methodological approach was primarily informed by discourse analysis and the aim was to provide a thick description of the texts involved in the creation of a webfilm discourse. These texts, which included moving image, still image, and written discourse functioned as inscription material in the actor-network of webfilm culture. One such inscription material was represented by the different webfilm manifestos. Human agents here functioned as system builders of the network by writing and circulating the manifestos with a goal of controlling and shaping webfilm as a new form of film. The role of the manifestos was thus to recruit co-agents including (web)filmmakers, site owners, other moving image forms, search engines, film discourse, alternative film culture, prosumers, the Internet, and other agents to form an alliance that inscribed webfilm as a new, alternative and independent film movement. While the manifestos thus signified the attempt of human agents to become system builders and to exercise power by inscribing an idea of a webfilm movement, they simultaneously reflected and exercised the power of technological agents within the network. 'Speaking' for agents including hardware, software, and bandwidth, the manifestos prescribed webfilm as a new filmic form in accordance with significant technological constraints. Discourse analysis was furthermore deployed in the description of two different phases of webfilm culture. The dotcom crash was the pivotal agent linking the two phases and crucial in the change effected within the webfilm network. Prior to the dotcom crash of 2001, the network's most powerful agents were technological and so the discursive construction of webfilm evolved around technological constraints of hardware, software, and bandwidth. The overall discourse of the Internet as new and exciting with what Bolter and Grusin (1999) call 'theology of cyberspace' was a similarly powerful actor, informing and influencing economical agents to the extent that Internet media firms and products easily elicited large amount of sponsorship and continuous funding. Texts pertaining to webfilms at the time, including websites, self-definitions, statements of purpose, artist statements, manifestos, webfilms, images and logos, webfilm festivals and webfilm sites, foregrounded the new, arguing for webfilms as a new form of film made specifically for the Internet. The main shaping power within the network

passed over to economical agents with the dotcom crash of 2001. Withdrawal of funding resulted in a breakdown of central alliances the webfilm had formed within the network. Crucially, the disappearance of co-agents relating to webfilm exhibition and distribution in the form of webfilm sites destabilised webfilm as new cultural form. This was compounded by the weakening of power of technological agents in prescribing limitations, resulting in the disappearance of the webfilm's former central defining characteristics. Discourse analysis helped trace this change within webfilm culture and the texts 'spoke for' the agents involved in this changing power structure within the webfilm network. Where formerly texts had reflected the attempts of human system builders to shape a new cultural movement, as well as the power of technological agents in the inscription of this movement, they now signified its failure. This was illustrated through isolated attempts by the former system builders to redefine webfilms in the face of changing conditions, especially, the loss of technological constraints. Apart from these few isolated attempts, there was no discourse pertaining to any such redefined form of webfilm. The entry of an increasing number of moving image agents, facilitated by the decrease in influence of technological agents as well as economic agents (reduction of costs of hardware, software, and bandwidth) furthermore compounded the webfilm's difficulties to sustain a distinct identity. This thesis concluded that because of these changes within the network, the webfilm in its original intended form, as thought up by various system builders, had failed. In order to re-enter the network and to stabilise itself once more, webfilms had to find a new set of alliances as well as change their formerly defining characteristics. Contributing to the discourse of webfilm, this thesis-as-agent argued that webfilms started recruiting co-agents of traditional media, especially film and advertising, and aligning themselves thematically with recognisable themes from popular culture (especially parody and fan films). Thus, the trajectory of webfilm changed from innovation in form to innovation in content. The new alliances ensured that webfilms retained a unique position within increasing moving image competition on the Internet and other distribution channels (such as mobile devices). The change in definition from 'short films made specifically for the Internet' to 'short films distributed mainly on the Internet' furthermore ensured that the identity of webfilms became less influenced by the technological agents that had previously been their main defining and inscribing characteristic.

Overall, the three case studies together investigated the shaping of webfilm as a new media form, and the role of various human and non-human actors within that process. They followed its emergence in a variety of interrelated networks. The influence of key actors, especially those related to technology, across the three networks illustrated the interdependent complexity of the webfilm's evolution. The aim of this research was not to supply a full, exhaustive description; instead, the three case studies provided exemplary focal points on different aspects of the webfilm network. A central theme running through the networks pertained to the distribution of power. One such example took the form of the human system builders described earlier. These human agents actively tried to prescribe webfilm as a new form of film and thus had a specifically artistic interest in webfilm as opposed to a commercial interest. This was signified by the 'anti-Hollywood stance' and DIY ethic inscribed in much of this discourse. On the other hand, interest groups in the form of large corporations had a different agenda. These system builders pursued largely commercial interest in the webfilm. Two large and powerful corporate actors, RealNetworks and Microsoft, identified the importance of moving image forms early on and initiated strategic moves to influence and attempt to control the development process of Internet video in the form of media formats. While RealNetworks was a new actor stimulated by the novel technology actor of the Internet, Microsoft was an established actor challenged within its field, the personal computer. In this power battle within the network, RealNetworks dominated the first few years of Internet video, influencing the trajectory of early webfilm. It did so by building alliances with other influential corporate agents such as the BBC, thus stabilising its own format over that of its rivals. RealNetworks furthermore enrolled agents of bandwidth, since low bandwidth inscribed the necessity of true streaming technology, and therefore, the Real format, over a format for downloading. Microsoft reacted to this threat by contracting and allying with its existing co-agents, inscribing the use of its own media player into each copy of its operating system. The shifting of power balance towards Microsoft's media player was compounded by the change in technological agents stimulating a decrease in the necessity for streaming media content and in favour of downloadable content. The intervention of legal agents in the form of a

lawsuit against Microsoft's anti-competitive bundling strategy was not forceful enough to destabilise the dominance of *Windows Media Player*. In recent years, the three main commercial actors (Microsoft, RealNetworks, and Apple) involved in producing media players have lined up music, and lately, video store agents in their quest for market dominance. The strategy is to delineate the relationship between media player and Internet video and audio media, thus stabilising their player over time in a strategic alliance with successful content. The ongoing change, especially relating to technological development is an occasion for redistribution of power among established agents who each pursue their interests and translate them into suitable arrangements. The latest example is that of mobile media players such as the iPod video, as well as video mobile phones. These developments have stimulated not only an increase in power of the commercial agent Apple, but brought about a change in alliances as each commercial agent has subsequently sought to stabilise their own position by recruiting other technological and media partners, for example content providers. The result of these activities is a constant flux of power within the webfilm network where stability is not an end product but a process and only achieved temporarily.

Overall, the webfilm network in its trajectory has stimulated both commercial as well as artistic agents, and a number of interest groups and human agents. Each of these, by pursuing their interest, has contributed to the development of webfilm while being themselves highly intertwined within other networks and processes. Only some of these processes were investigated as part of this research. Through the changing networks of actors, the ANT-based approach enabled the description of various interdependences between agents and illustrated how processes of inscription and translation both enabled and constrained the evolution of webfilm. Similar investigation of other media forms, both on the Internet and other new media channels, may prove insightful to obtain a fuller description of the evolution of visual and other texts, and the role of system builders within these networks.

7.2. Actor-Network Theory as Tool for New Media Research

While the main aim of this research was to study the evolution of webfilm using the methodology of actor-network theory, a secondary goal was to assess the usefulness of ANT as a methodological and theoretical tool to study new media. The research question ‘How useful is actor-network theory as a methodological and theoretical tool to study new media?’ formed the backdrop for all three case studies. During the course of research, a number of findings were made pertaining to this question.

ANT was suited to studying a phenomenon of new media because of the evolution of the discipline itself. That is, at the beginning of the research period (2002), the discipline of new media was relatively new and in the process of being shaped, both at macro-level (academic institutions, public discourse, government policies, etc.) and at the micro-level of academic discourse. The latter was represented by the heterogeneous theoretical approaches to new media as a field of study, and the competing definitions surrounding ‘new media’, including its relation to various other disciplines such as media and cultural studies, information technology, sociology, film studies, etc. In order to understand a phenomenon of new media such as webfilm, the struggle and instability of the shaping of new media itself had to be taken into account. ANT equipped the researcher with tools that were suited to studying a phenomenon in a context where little fixed ideas or theories had been formed. The tools of tracing and mapping change were most suited to investigate competing approaches and theories, each of which was trying to inscribe a definition of new media and shape its evolution. The first part of this thesis therefore sought to trace and map the field of new media studies, zooming in to various approaches with the aim of describing the struggle involved in the shaping of a new discipline of study. The main two contesting agents trying to appropriate the field of new media were social constructivism on the one hand, and technological determinism on the other. The first agent, represented by the school of Raymond Williams’ British cultural studies, sought to recruit new media as discipline aligned with traditional media studies. Here, new media was inscribed as a response to human social need, and the focus was on how new media were socially constructed. A more powerful and influential agent that had achieved great and renewed stability within new media discourse was the approach of technological determinism. Its system builders,

especially McLuhan, and a theory of new media determining humans, were able to form strong alliances within popular culture (government discourse, popular literature, media representations etc.) as well as academic discourse (Manovich, Virilio, etc.). While the main underlying theoretical struggle within the network of new media thus pertained to these two discursive agents, this research also zoomed in to a variety of other aspects of the evolving discipline. The aim here was to map out central nodes of new media theory and to follow some of its emerging theorists, tracing key issues such as power, information, and concepts of space. Actor-network theory helped by allowing the researcher to follow various agents along the network, without prescribing a unified or stable theory of new media. The goal was not to create or subscribe to a Grand Theory of new media but instead, to reflect methodologically its heterogeneous nature. While it could be argued that such an approach is in danger of relativism and solely self-reflective, the absence of a pre-existing theory was considered a strength rather than a weakness, as it allowed the researcher to follow the agents instead of adhering to a prior theoretical framework. One aspect of mapping out the evolving discipline was to describe a number of important system builders of a specific theory of new media. The new media discourses of Manovich on the one hand and Bolter and Grusin on the other hand were read against one another. The final node under investigation was the specific new media phenomenon of webfilm. Here, the aim was to introduce discursive system builders pertaining to webfilm. This last aspect served to bridge the network of new media as (new) discipline of study and the evolution of webfilm as (new) form of film.

Another characteristic that made ANT suited to studying new media was its considerable focus on materiality. The problem with more traditional media and cultural studies was that, due to its political motivation, it foregrounded human struggle and the social, often to the exclusion of material reality. Similarly, much poststructuralist analysis used discourse as its main unit of analysis, and the category of (human) identity and its construction and prescription, while neglecting the properties and characteristics of non-human identities. Much of this discourse was based on a binary configuration of subject versus object, and (human) identities were conceptualised as relatively stable, defined along an axis of exclusion and opposition

(via categories such as race, class, and gender). ANT on the other hand replaced the category of identity with that of agency and foregrounded the network as main unit of analysis. The absence of a pre-existing political and moral stance in ANT proved invaluable as it made it possible to focus on factors traditionally excluded from an analysis of the media.¹⁴⁵ Specifically, the absence of a social and human-centred approach enabled a discussion of non-humans beyond the framework of ‘social use of technology’ traditionally associated with cultural studies. This shift enabled the inclusion of material factors without resorting to either social constructivism or indeed technological determinism. Given that much of new media was material, and given that its materiality was considerably more visible, active, and influential than in ‘old’ media, ANT and its theory of the agency of technological artifacts was highly suited to its analysis. The primary agents included in this specific study of new media included hardware, software, and bandwidth. Forming a sociotechnical ensemble with human agents, new media devices stimulated a relationship where agency was alternated between technology and humans and passed along various networks that both agents were embedded in. Other material agents involved in new media, not all of which were part of this analysis, included mobile phone masts, analogue and digital cables, fibre optic networks, satellite dishes, and others, all of which inscribed into the network and were inscribed upon themselves. This emphasis on materiality furthermore penetrated much of popular discourse on new media, illustrated by a culture of continuous upgrades driven by an underlying dogma of better, bigger, and faster technology, and the inscription of this ideology by software agents (for example computer games and programs) themselves. Overall, ANT provided both theoretical and methodological tools to account for this increasing influence of materiality, both within the network of new media itself but also with regard to its inscribing and inscribed discourse. It is argued here that this ANT toolset is highly suitable for new media research.

A third aspect supporting this argument is ANT’s ability to incorporate change. New media were characterised by fast-paced change in what Virilio called a culture of

¹⁴⁵ While immediate and obvious politics are absent from a mostly descriptive analysis, there is scope to use the results from this thesis as a starting point for political intervention. Examples pertain to the areas of digital inequality, geographical agents, and the power of technology interest groups such as Microsoft and Google.

'dromology', where speed and time had overtaken space as main influential category. New media thus favoured the quick glance as opposed to the gaze, and communication was 'instant'.¹⁴⁶ A property related to quick-paced change was instability. That is, new media networks were not only heterogeneous and fast changing, but also, this stimulated instability. The competing factors within the networks included economic, political, commercial, technological, and geographical agents, and each had to continually recruit co-agents and form alliances in order to iterate stability and thus to retain power. This specific investigation was characterised by a quick change in power relations, the passing on of power along the network, and a change in influence of technological agents, geographical agents, economic and commercial agents, over a short period of time (5 years). ANT provided an excellent toolset to investigate this fast change, instability, and heterogeneity of a new media network. For example, the techniques of translation and prescription were strategies of various agents to achieve stability and gain power within the networks. The agents changed alliances within the network depending on their need for stability, and used the tool of prescription as a means to exercise power. ANT was the most suited methodological approach as it incorporated and could make sense of rapid change, rather than rely on any fixed outcome. The fast pace of change especially concerning the Internet and its various technologies was suited well to the idea of agency along a network. The actor-network approach was able to explain new media's heterogeneity, and its methods of tracing networks and following the actor were central to understanding change within new media beyond the binary subject/object-dichotomy and its conceptualisation of identities as relatively stable, discrete, independent, and fixed. The ANT replacement of identity with agency furthermore facilitated a better understanding of issues of convergence that are central to any study of new media. That is, new media were understood not as separate entities or identities, but instead the focus was on the way they interacted with and were interrelated to other agents in a messy interdependent complexity. It was only a theoretical approach of ANT that allowed an exploration of media beyond their separate 'identities', which in turn facilitated an understanding of media

¹⁴⁶ The discourse of speed and time penetrates Internet terminology. See for example 'real-time' streaming, 'instant' messaging, etc. It would be interesting to analyse such Internet terminology using discourse analysis.

convergence with what Bolter and Grusin (1999) described as a process or act of remediation. Throughout this research and beyond, ANT was suited not only to explore change within the network, but also the permeability of various agents and affirmed agency as the best category of analysis to analyse issues of convergence, which is a central property of new media.

The final reflection on actor-network theory and its appropriateness for a study of new media relates to the position of the researcher. It has been argued in chapter 3.4. that new media cannot be studied from an ‘offline’ position, by studying mainly ‘offline’ sources. Instead, researching new media requires an active engagement with its forms and its data, and a knowledgeable prosumer competence. Actor-network theory and methodology was highly suitable to making sense of the position of the researcher as it allowed her to enter the network as new media agent. In constant negotiation with her co-agents, the researcher was able to describe the network from a position internal to the new media network under investigation. In the position of new media agent, the researcher was herself prescribed by various agents while trying to inscribe back into the network. Two constraints experienced and engaged with serve to illustrate the researcher’s agency and negotiation within the network. The first sociotechnical ensemble pertained to the micro-network of the researcher and her technological co-agents of software and hardware and in particular, bandwidth. She had planned to spend the last phase of writing up this thesis abroad, in the Italian countryside. However, this particular part of the Italian countryside, in Abruzzo, had a very poor bandwidth infrastructure with no high-speed Internet connection in the form of ADSL. The author thus negotiated within the network and in the absence of a telephone landline recruited the co-agent of GPRS technology, dialling up to the Internet using a mobile phone. This connection in turn inscribed a different use of the Internet. First, it was now strictly timed. Every unit of Internet time consisted of a period of 15 minutes and cost €1. Thus, the author was constrained by a combination of technological and economic agents, accessing the

Internet in accordance within a prescribed timeframe.¹⁴⁷ Secondly, it changed the speed and modality of Internet use. With a maximum speed of 56.7 Kbps, it constrained the number and size of webpages that could be loaded at any given time. In order to negotiate a better speed, the researcher acted by inscribing into the browser software not to display media files (images, audio, and video). Despite this and subsequent attempts to interact with and counteract the power of GPRS, the technological and economic prescriptions proved too powerful and the researcher had to return to the UK. The second agent affecting the researcher within the new media network related to intellectual property law. As discussed exhaustively within this thesis, informational power in new media is exercised through possession of intellectual property. In the specific object of study of this thesis, webfilm, this was represented by the use of streaming technology to transmit webfilms. Since streaming technology did not download a copy of the webfilm onto each prosumer's computer, copyright was not violated and thus intellectual property protected.¹⁴⁸ That is, the legal agents had recruited the technological agents of streaming, constraining the researcher to only view webfilms in their online environment. Practically, this prescribed a number of conditions onto the author. First, she would have to have constant access to a high-speed, always-on Internet connection, and she would not have the possibility to study webfilms offline (for example by storing a copy locally on her hard drive). Secondly, she would have to repeatedly be exposed to varying degrees of advertising on webfilm sites, before she could view the films. Thirdly, she would have to risk the disappearance of the object of study, insomuch that, in the absence of a locally stored copy of the webfilms, she had no control over whether or not the films discussed would be accessible and available throughout the period of study and examination of this thesis. Thus constrained within the network, the researcher as new media agent sought to recruit co-agents in order to strengthen her position with regard to the powerful agents of intellectual property. An alliance was formed with a technological agent in the shape of a piece of software called *CoCSoft Stream Down*. This software, a streaming media download tool, enabled the researcher to download all webfilms including those transmitted via streaming

¹⁴⁷ For example, she had to be careful to disconnect just before the 15-minute-period had expired. Otherwise it would have 'ticked over' into the next 15-minute-period, thus costing another €1 and prescribing another 15 minutes online, in order not to waste any valuable 'Internet time'.

¹⁴⁸ See 4.4.1. for a more detailed analysis.

technology, onto her hard drive. Thus, the author as new media agent had translated online-only webfilms into media files stored locally, greatly facilitating their study¹⁴⁹ Overall, these examples serve to illustrate the usefulness of actor-network theory to studying new media from the vantage point of the researcher's position. Forming a socio-technical ensemble with technological, legal, and economical agents, the author has had to negotiate various difficulties within the new media network and form alliances to assert her own position, exercising power and inscribing into the network with the aim of stabilising her research over a period of four years.

To conclude, this discussion argued for a high suitability of actor-network theory and methodology as tool for new media studies. It was described how ANT is conducive to new media research on a number of levels, including its capacity to explain change, its focus on materiality, and the greater influence of non-human agents. With the increasing convergence of media including a continuous stimulation of remediation, a theory and methodology of actor-networks seems certain to become more relevant to the study of both 'old' and 'new' media. There is a need for new research to use fresh approaches to studying various media phenomena over time. It is hoped that this present investigation contributes to a corpus of new media research that applies such a fresh approach in the form of actor-network theory.

¹⁴⁹ The researcher compiled a DVD-Rom containing all webfilms that were discussed in this thesis. However, since the distribution and publication of such a compilation would be illegal, this DVD-Rom has not been included with this thesis. In the network of academia, legal agents are far more powerful than the researcher and any alliances she may have formed. All webfilms have instead been indexed with their online location in the reference section of this thesis.

8. Conclusions

8.1. Summary

The webfilm has transformed considerably during the course of this research. This thesis started with a problem of categorisation and classification of a new form of media. The objective was to trace and follow the evolution of webfilm via a number of different trajectories, to assess its position within the field of new media and its relevance as a new form of film on the World Wide Web. Using the methodology of actor-network theory, the webfilm was analysed in three interrelated case studies. The case studies were highly selective and the account of the resulting network descriptions therefore partial.¹⁵⁰ A number of reasons motivated the choice of networks in each respective case study. The first two case studies were chosen because they followed traditional areas of investigation of film studies – production, consumption, and distribution. Since the starting point for this research was the question whether ‘webfilm’ was a new form of film, the idea was to deploy traditional categories of film studies analysis to provide a useful vantage point for understanding the category and media form of webfilm. The first case study (webfilm prosumption) was chosen deliberately to allow a focus on technological agents to the exclusion of human agents, while the second one (webfilm distribution and exhibition) traced differences in distribution of old and old media. The third case study, webfilm culture and discourse, aimed to describe human system builders in the sociotechnical ensemble of webfilm. That is, while the first two case studies followed the power of non-human agents, the third case study was intended to trace attempts of human system builders to work with technological prescriptions, thus prescribing back into the webfilm network. It furthermore described the emergence of an additional powerful, economic rather than technological agent, the dotcom crash, and the way in which it influenced the change in webfilm definition. Together, the choice of case studies provided an extensive description of the webfilm network, including the nuclear network of human prosumer and their technology, in a highly developed UK. Other major players and agents, particularly those pertaining to

¹⁵⁰ See 3.2.1. for a discussion of the methodological principle of selecting networks for analysis.

geography, political and institutional discourse and policies, were excluded from the analysis, since those were not as relevant to the three research questions guiding this study: (1) How are non-human actors involved in the creation of a specific form of media (the webfilm)? (2) How did 'webfilm' arise as (new) form of film? (3) How useful is actor-network theory as a methodological and theoretical tool to study new media?

The thorough investigation of the production, distribution and exhibition context and the culture and discourse of webfilm had a number of interesting results. The major finding was that webfilm, as a discrete new form of film with an associated culture only existed for a short period of time (1997-2001), and was largely discursively constructed. The conditions of its existence were rooted in the discourse of the new which constituted a defining characteristic of the first commercial years of the World Wide Web and what Bolter and Grusin (1999) called the 'theology of cyberspace'. A 'revolution in filmmaking' pertaining to a more democratic means of filmmaking was mainly found in manifestos and in other writings on webfilms, without any real effect. Towards the end of the research period, however, the greater degree of democracy and prosumer participation as hailed by early webfilm discourse was realised by a great increase in video community sites and a general increase of prosumer video content on the WWW. However, this was not related to an aesthetic discourse of new filmmaking but in line with increased user participation with what O'Reilly has called *Web 2.0* (O'Reilly 2005). Video content did not constitute a new filmic form but instead the latest media form to be published on community platforms following text (blogging) and photography (photoblogging). A second result of this study was that webfilm and indeed any other Internet video could not be relegated exclusively to the sphere of the Internet. The issue of convergence lay at the heart of this study and any relegation of webfilm to the realm of the Internet was artificial. Convergence penetrated all forms of text, and moving image in the form of TV programs, feature films, short films, and other web video were broadcast on a great variety of devices including TV sets, mobile phones, handheld games consoles, and computer screens. The subject of convergence, the prosumer, was at the centre of the evolution of webfilm. Towards the end of the research period, prosumer participation and new media video came to wide recognition in the terror attacks of

7/7. Here, for the first time video sequences taken by mobile phones from passengers on the Tube trains made the 6 o'clock news, which was "the first time such material had been deemed more newsworthy than the professionals' material" (Douglas 2006).

8.2. Contributions

The main contributions of this thesis, listed by the field to which they contribute, are that it has:

Webfilms

- Explored the evolution of an original media form, the live action webfilm, thus closing a gap in knowledge
- Gathered and analysed a corpus of webfilm
- Demonstrated that webfilms are not an exclusive and new genre of film

New Media Studies

- Explored the evolution of new media studies as new discipline
- Evaluated new media theories and underlying conceptions of technology and society
- Assessed the usefulness of new media theories for online research

Actor-Network Theory

- Extended the application of ANT to a field traditionally not using its theory and methodology (Media and Cultural Studies)
- Explored the nuclear sociotechnical network of humans and their computer in Internet prosumption and distribution
- Demonstrated the usefulness of ANT for new media research

8.3. Limitations of Thesis

Chapter 1 of this thesis introduced boundaries that restricted the scope of the research. This section reflects on those boundaries and discusses further limitations that have become apparent in the course of its development.

The first limitation draws on the generalisability of findings. The account of webfilm evolution and webfilm culture presented in this thesis is necessarily partial. The choice of case studies was motivated by a specific angle of inquiry (see 8.1.) and as such is not representative for all other areas of webfilm, online video, or other forms of moving image on the Internet. More specifically, animated webfilms, which had already been researched extensively by Wehn (2000-2005), were excluded from the account of webfilms presented in this thesis.

Another limitation of the thesis, which in itself further limits generalisability, is the small corpus size. This is especially true for the first phase of webfilms (1997-2001), where the corpus only consisted of 51 subjects, 32 of which were animations and thus not relevant to the analysis. The issue here however is one replicated across much Internet research dealing with content from the early years of the Internet. As discussed in 3.5.2., limitations pertaining to early Internet research can only partially be resolved. The underlying problem is the non-physical quality of digital media. Lash (2002) argues that the sociocultural category of information is constantly new and non-durable, and for Lister *et al.* (2003) this digitality is one of new media's key defining aspects. In the case of online media texts, their digitality means they are easily and quickly replaced, and therefore, constantly new. This permanent state of flux of digital media as opposed to the durability of old analogue media means that all online research is subject to the limitation of disappearing content, and this is particularly true for online research dealing with early web content.

Related to the aforementioned limitation is another characteristic of the Internet, one pertaining to the fast-paced change in an online environment. In this specific investigation, towards the end of the research period the phenomenon of video community sites had significantly gained prominence. Online video had rapidly increased and produced a great amount of interesting and varied forms of moving image. While the methodology of actor-network-theory was suited to this fast-paced change due to its high adaptability, this investigation could nevertheless only touch upon the emerging corpus of online community video. Similar to the permanent flux

of online texts discussed above, the problem of fast-paced change too is shared across other Internet and new media research and as such not a limitation specific to this research.

8.4. Future Work

This section outlines future work that would allow further investigation of many of the results found thus far, as well as suggesting new but related areas of research.

The great increase of moving image forms over the last two years of this study (2004-2006) call for a new and different approach to Internet video. Research can no longer aim to encompass all forms of moving image on the WWW. Instead, different strands are worthwhile investigating and could form a focal point for future work. More research is needed into the development of webfilm as prosumer film that uses the Internet as main means of distribution. That is, the subcultures of film artists and especially fan films look the most promising as ‘alternative to Hollywood’ and thus are most closely related to the original starting point for this research – film production and distribution away from Hollywood and beyond the hierarchies of traditional media production. It is anticipated that these webfilms will increasingly use other new media, including mobile phones and handheld game consoles, as means of distribution, and it will be interesting to see how this participatory culture and its subject, the prosumer, finds its place amidst the ever-increasing choice of satellite TV and a multitudinous variety of moving image offerings.

A different field of Internet video that needs further research relates to the considerable increase of video community sites. These sites also have the prosumer at their centre, but their content tends to be more irreverent, comical, personal, and deregulated. Their steady increase and the interest of commercial actors including Google, signified by its purchase of YouTube in October 2006 for \$1.65bn, makes such sites and their web video an interesting object of study. It is anticipated that prosumer video on video community sites and other distribution platforms will become increasingly important over the next few years.

Lastly, a different trajectory but similarly worthy for analysis relates to the convergence of TV and the World Wide Web. Internet TV, TV-on-demand, and the use of broadband to stream TV is a battle involving various commercial actors

including BSkyB, Virgin, and others. It will be interesting to see how this battle is played out in the near future, particularly in the light of increasing convergence between traditional forms of media.

Overall, the field of moving image and new media, and specifically Internet video, is much wider and diverse now than at the start of this research, and future research needs to take account of this increasingly diversified visual culture.

8.5. *Final Words*

In concluding this thesis, it seems most appropriate to reiterate its central findings. Webfilms, as a unique and discrete new form of media, only existed for a short period. The concept of webfilm as a revolution in filmmaking was largely discursively constructed. Claims about its newness were mostly influenced by the discourse of the new that permeated early new media discourse. The 'revolutionary potential' of webfilms for alternative, non-hierarchical filmmaking was greatly limited by prescriptions of powerful technological, and later, economical agents.

Nevertheless, the findings of this thesis are important. First, it illustrates that, while video sites such as YouTube have only come to the media's attention since 2006, there is a history of film and video on the Internet. That is, web video is nothing new, and sites such as YouTube and Dailymotion have not come out of nowhere. Instead, online video has a history and a culture, and this thesis attempted an archaeology of this culture from 1997-2005. It could be argued that the most recent development, namely that of video community sites, constitute a third phase of webfilms. It is suggested here that this third phase started in 2005 and is characterised by the rise of videoblogging and in particular, the 'YouTube' phenomenon. There is a change in terminology for this third phase: rather than 'webfilms', such films are now simply 'online videos' or 'web videos' (Kirsner 2006).

The findings of this thesis are greatly relevant because they provided a history and culture of moving image on the Internet, thus linking webfilms to current (2006) new media phenomena. The critical evaluation of new media theory and its underlying discourse of the new, constituting a central backbone to this research, furthermore provide insights to understanding the latest (2006) claims about the significant, potentially revolutionary nature of 'web 2.0' in general and web video in particular.

This 'revolutionary nature' relates mainly to the promises of increased prosumer participation and democracy 'made possible' by digital media. To illustrate this point, the thesis ends by juxtaposing two relevant quotes:

In the digital age anyone can make their own programmes and share them with the world online.

(Milani 2007)

Sieze [sic] the day, you can make your work available to millions of people. Use this moment; be part of shaping the worlds [sic] next, great art form.

(Kronschnabl 2001)

The two quotes do not sound too different. We have been there before. The new has never been new - it is merely imagined as such.

Appendix: Other Technological Agents

Software: Overview

The main challenge with regard to filmmaking on a PC is the considerable size of digital video files. Digital video is data rich (approximately 9.5 minutes of digital video footage corresponds to 2GB in file size), and thus, as discussed earlier, a large hard drive and a considerable amount of RAM are the key requirements for digital filmmaking, including webfilmmaking. However, it is not only the size of the hard disk and the amount of RAM that impact on the quantity of digital moving image that can be handled. Various aspects of software also restrict the amount of data (and thus, of live action footage) that can be manipulated at a time. The majority of restrictive software aspects no longer apply; however, until 2001 and the release of Windows XP, webfilmmakers faced various software-related issues that considerably limited and influenced the production of digital film on a PC. Some of these issues are explored below.

Standard Video for Windows AVI files (1.0) are originally specified with a size limit of 4GB. In practice, however, they are software limited to 2 GB in size. This means that only approx. 9.5 minutes of a Video for Windows AVI file can be captured at any given time. For example, an old version of the popular video editing software *Premiere* (version 4.2; released in 2000) is limited to 2GB AVI files. The solution to the 2GB file limit was to capture continuous video across multiple AVI files, all of which were less than 2GB in size. That is, it was still possible to capture a 1-hour long piece of footage but instead of one AVI file they were stored as 7 separate AVI files on the PC. In effect, this overcame the 2GB size limit. While the Video for Windows AVI (1.0) file format thus restricted webfilmmaking with regard to the size of footage that could be imported, a new AVI format in effect removed the size limit by supporting any file size. The majority of new programs use this AVI 2.0 format (which is incompatible with AVI 1.0), and AVI 2.0 is implemented in the Windows Direct Show routines, replacing the old Video For Windows routines. Since most programs now use AVI 2.0, prosumers in effect do not have to worry about the 2GB limit imposed by AVI 1.0 when making a webfilm. However, while the AVI file size limitation in the reality of webfilm production no longer matters, file size is still limited by the disk format used by the operating system. The limit imposed by the

disk format is separate and unrelated to the AVI 1.0 file size limit. It is a property of the operating system. For example, the disk format FAT32, which is supported by Windows 95, Windows 98, and Windows ME, limits the file size to 4GB (approx. 19 minutes of video).¹⁵¹ Only the disk format NTFS, which is supported by Windows NT, Windows 2000, and Windows XP, is able to read and write files that are bigger than 4GB. That is, even if a webfilmmaker uses programs that use AVI 2.0, s/he will still not be able to work with files larger than 4GB (footage longer than 19 minutes) if s/he uses the operating system Windows 98. For webfilmmaking, then, the best operating systems to use are those that put no limitation on file size. These are Windows NT, Windows 2000, and Windows XP. The various limits imposed on the file size have a considerable impact on webfilm production. While webfilms are mostly short films and thus on average 5 minutes long, the file size limit still plays an important role for films over 19 minutes and also for importing footage that is longer than 9.5 and 19 minutes respectively. The original AVI format (AVI 1.0) can be mostly disregarded, unless a webfilmmaker uses a rather old system and software such as *Premiere 4.2*. On the other hand, the choice of operating system is still a considerably important factor. Those who bought their PC with Windows 98 or Windows ME preinstalled and who have not (yet) upgraded to XP¹⁵² will find that they cannot import more than approximately 19 minutes at a time. Anything above this amount will hit the 4GB limit of FAT 32.¹⁵³ To conclude, then, the recommended operating systems to use for editing digital video and thus, for webfilmmaking, are Windows XP, 2000, or NT. Windows XP is the best choice, since it is the newest of the three and will therefore be supported for much longer than the other two. Another consideration is that the end of life for support of the platforms Windows 95, Windows 98, and Windows ME is 30 June 2006. This means that in effect, Microsoft will no longer provide technical updates (including vital security updates) and fixes to these operating systems after 30th June 2006 (Microsoft Corporation n.d.c). Interestingly, Windows 98 and Windows 98 Second Edition support was supposed to end much earlier - on the 16th January 2004. Microsoft state

¹⁵¹ The file system FAT16, which can be used by Windows 95/98/ME, has a 2GB file size limit. However since FAT32 is much more common than FAT16, the FAT16 2GB limit will not be discussed here.

¹⁵² A process which is not straightforward since XP requires a clean install.

¹⁵³ The author herself experienced the 4GB file limit a few years ago, when working on a film in Adobe *Premiere*.

on their website however that the “continual evaluation of the Support Lifecycle policy revealed, however, that customers in the smaller and the emerging markets needed additional time to upgrade their product” (Ibid). This indicates that the uptake of Windows XP was slower than Microsoft had originally anticipated. In fact, it took 18 months for Windows XP to overtake Windows 98 as the operating system of choice (in May 2003).¹⁵⁴ By the end of 2004, however, the use of Windows 98 has dropped sharply - sources are inconclusive but range from 5.4% to 3.69%. In sharp contrast to the decrease in use of Windows 98, Windows XP is growing fast after its slow start and now (at the end of 2004) has a market share of approximately 59.8% (App Creator n.d.; Refsnes Data n.d.; Report Magic 2004). For webfilmmaking, this means that the safest bet is to upgrade to Windows XP. Using Windows XP ensures not only that the webfilmmaker can import and manipulate digital film without any restrictions on size. At a more basic level, it also means that the system used for editing is more stable since the crucial technical support for XP by Microsoft will last much longer than the end-of-life date set for Windows 98 (30th June 2006). Ultimately, the choice of operating system will not be an issue for webfilmmakers for much longer, and the 2GB and 4GB size limit respectively will be outdated.

We have seen that software issues can have considerable influence on the network of production in that it can restrict the size of the film the webfilmmaker can create. Apart from the AVI conventions and the crucial operating system, however, there are additional pieces of software that need consideration with regard to the network of webfilm production.

Alongside the operating system, the second crucial piece of software to webfilmmaking is a video editing program. Depending on the computer the prosumer uses (i.e. PC or MAC) there are a number of choices for video editing software. Most highly regarded for professional use is Apple’s software *Final Cut Pro*, which is often considered the industry standard DV editing suite. The latest upgrade is *Final Cut Pro HD*, which bridges the gap from semi-professional to professional use by making it possible to import from HD camera, edit without loss of quality, and output again as HD video over FireWire. Given that, as discussed earlier, the current trend is towards consumer HD cameras, with this move Apple have strengthened

¹⁵⁴ On the 7th May 2003, Windows XP had reached 34.73% of the market share, leaving Windows 98 behind for the first time with 24.93% (ClickZ Stats staff 2003).

their position as professional video editing software. However, *Final Cut Pro* only works on an Apple Macintosh, and for this study, for reasons outlined earlier the use of PCs is recommended for webfilmmakers. For a semi-professional video editing suite, the most popular choices for the PC are Adobe *Premiere Pro* and a prosumer version of industry standard *Avid*. Due to the considerably higher cost of the *Avid* prosumer version (*Avid Xpress Pro* retails at £1,408.83),¹⁵⁵ this thesis will consider Adobe *Premiere*, the latest version of which (*Premiere Pro 1.5*) is retailing at a considerably cheaper £536.38 at the time of writing (Dealttime.co.uk n.d.). The example of the development of Adobe *Premiere* concerning two crucial points – the 2GB file limit and the real-time effects preview – illustrates how video editing software has affected webfilm production. The 2GB AVI file size limit, as discussed earlier, restricted early digital filmmaking by limiting the amount of digital video that could be captured and manipulated to approximately 9.5 minutes. A different, 4GB file size limit was enforced by the file system FAT32 on which the operating systems Windows95, 98 and ME run, resulting in a digital video file's maximum length of 19 minutes. The video editing software's real-time preview feature, another important aspect, is crucial with regard to the ease and speed with which special effects and transitions can be applied and viewed. Real-time preview allows the user to see effects, titles, and transitions within the context of the webfilm in progress without having to render it first. This has a number of crucial advantages. For example, the applied effects or transitions can be tried out and viewed instantly, rather than having to wait for the software to render them first.¹⁵⁶ Additionally, without real-time rendering, even if an effect has been rendered and approved of by the user, s/he always has to re-render as soon as s/he performs any additional changes on the rendered sequence (such as changing or adding additional effects). Real-time preview is crucial to smooth webfilmmaking, since it greatly increases the user's control over the effects, transitions and titles used and allows for quicker and instant creative editing. The following table illustrates the development within Adobe

¹⁵⁵ There is a cheaper consumer version of *Avid* retailing at £505.25; however, it lacks many of the features of *Avid XPress Pro* and *Premiere Pro*. In addition, Adobe *Premiere* is the most popular video editing software particularly for people starting out on digital filmmaking.

¹⁵⁶ From the author's own experience, the 'waiting time' for rendering can be anything from 1 minute to 10 minutes or more, depending on the number on effects and the length of the piece the effect is applied to.

Premiere with regard to the two crucial points of file size limit (both software and operating system-based) and real-time preview:

Premiere version	Year of Release	Platforms ¹⁵⁷	File size limit	Real-time preview
4.2	1996	Win 95, NT 3.51/4.0; Macintosh	2GB file size limit is part of Premiere software itself	No
5.1	1999	Windows 95/98/NT; Macintosh	Premiere-based 2GB limit removed. 4GB limit still applies to Windows 95/98 operating system (due to FAT32 file system)	No ¹⁵⁸
6.0	2001	Windows 98/98SE/2000/Me/NT 4.0; Macintosh	See above. 4GB limit only applies to Windows 98/98SE and ME	No ¹⁵⁹
6.5	2002	Windows 98SE, Me, 2000 (SP2), or XP; Macintosh	See above. 4GB limit only applies to Windows 98SE and ME	Yes

¹⁵⁷ As specified when software was first released.

¹⁵⁸ It is possible with some restrictions with a real-time capture card.

¹⁵⁹ See above.

7.0 (Pro)	2003	Windows XP	No file size limit	Yes
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Table 7: Development of digital video editing software Adobe Premiere with regard to operating system compatibility and the features of file size limit and real-time preview.

For the purpose of webfilmmaking, the most freedom from technical constraints is achieved with the latest version of *Premiere*, since it does not limit the file size (due to no longer supporting any platform apart from Windows XP) and has real-time preview built into the software, thus eliminating the need for an expensive real-time capture card. The table also illustrates the general trend away from Windows 98 software support due to not only the considerable decrease in the use of Windows 98 but also the poor quality of the platform in regard to digital filmmaking – namely the 2GB file size limit of FAT16/32. Interestingly, the latest version of *Premiere* is not only limited exclusively to the operating system Windows XP, but also no longer supports the Macintosh platform. This is due to the fact that the Mac-own digital video editing software is such a strong market force (particularly with *Final Cut Pro* but also with the basic *imovie* which comes preinstalled with every Mac) that it seems that *Premiere* has finally given up competing for a Mac user base (Future Publishing Ltd 2003). The development of Adobe *Premiere* furthermore illustrates the complex working of soft- and hardware with regard to any PC use, here illustrated by webfilmmaking. PC software and hardware are often inseparable and work together to achieve the desired effect. The example of *Doom 3* earlier showed how the user's gameplay experience relies heavily on how well the software and hardware work together. In the example of Adobe *Premiere*, there is a similar interaction of soft- and hardware. In the earlier versions of the program, hardware and software had to be chosen in a specific manner in order to overcome the file size limit and the absence of real-time preview. Even in the newer versions, poorer hardware will restrain and change the way in which *Premiere* can be used by the webfilmmaker:

We first installed *Premiere* on an ancient 900MHz AMD machine with 128MB of RAM, which meets the minimum specs, but just barely. A simple cross-dissolve yielded 8-9 frames per second (fps) stuttering previews in the 320x240 preview window. When a title with a drop shadow was added on top of that, the preview frame rate plummeted to less than 3 fps. In comparison, Vegas Video 3.0

(released over a year ago) averaged over 12 fps on a similar project. A more modern 2.2GHz Compaq Presario 8000T with a Gig of RAM saw improved, but not spectacular performance increases. It wasn't until we tried a 1 Beyond dual-processor AMD 1800+ system that Premiere really took off. We saw similar results with other transitions and even complex video filters, like the new Lightning filter.

(Muratore 2003)

Within webfilm production, the choice of software, similar to that of hardware, has a considerable impact on the ease and speed of production, as well as the length of the film. While there are ways to navigate difficult hardware and software issues (such as multiple capturing as a workaround the AVI 2GB file limit; real-time capture card to enable real-time rendering), this nevertheless illustrates how PC software and hardware are inextricably linked. The user is not outside of this interaction of hardware and software. Instead, s/he forms part of the network and her or his knowledge is crucial to negotiating the imposed restrictions and to overcoming the limits both hardware and software impose.

Additional software used by webfilmmakers which impose their own constraints but which will not be discussed further are image manipulation software (such as Adobe *Photoshop* and *Illustrator*), Animation software (Macromedia's *Flash*), 3d software (for example *3D Studio Max*), audio editing software (*Cool Edit Pro*, *Cubase*), and web editing software (such as *Dreamweaver*, *Homesite*).

In the context of software and its impact on webfilm production, it is useful to reconsider Lev Manovich's position with regard to new media production. As discussed earlier, Manovich argues that the software used determines all new media production via the availability of menus from which the user has to select. He contends that creation in digital media is based on selection from pre-defined menus, rather than what he considers 'genuine' and 'free-flowing' creativity. For Manovich, the software already predetermines any outcome of new media production, since it only allows the user to do certain things and not others. Consequently, the relationship of software and user is one where the software controls and determines any end product. Any webfilm, in this account, is already pre-established and

predetermined by the sum of all available choices such as the software's various menus (Manovich 2001: 129).

Manovich's theory is flawed in a number of ways. Firstly, he assumes that there is a one-way, unidirectional relationship of software and user, where the software determines the user's choices and ultimately disables any originality.¹⁶⁰ He does not account for the user's changing and rewriting of software as evident, for example, in the culture of hacking and the free software/OpenSource movement. What is underlying in Manovich's account is a concept of identity based on representation rather than agency. That is, for him, the pieces of software as well as the user are separate objects and identities with power to act upon one another. This thesis, however, argues against a concept of agency that is intimately tied to identity. Instead, following actor-network theory, agency is defined as the ability to cause effects and can therefore occur in both human and non-human agents. As shown in chapters 2.2.3. and 3., agency is understood to occur in a network of actors in constant negotiation with one another. Webfilm and any new media production and consumption are seen as a result of negotiation amongst the various actors in the network. The example of Adobe *Premiere* and *Doom3* has illustrated how software is not a static, self-contained object influencing upon the way in which a person uses their PC or creates a webfilm. Instead, the relationship of user, software and hardware is one of constant negotiation, and agency not only occurs from the user towards soft-and hardware but also from hardware to software, software to hardware, and hardware and software to user. Thus, there is no unidirectional relationship in this network and not one single agent has continuous or hegemonic agency. Instead, the network is characterised by multiple agents with varying degrees of agency. This concept shall be called *alternate agency*. The concept of alternate agency illustrates how human and nonhuman agents interact continuously with regard to ICT and the continuous negotiations with the machine that users experience. This thesis argues that agency occurs not simultaneously but *alternately* between hardware, software, and user.¹⁶¹ In this context of computing, technological agency is closely related to

¹⁶⁰ Manovich's concept of 'originality' has been challenged and discussed in chapter 2.4.2.

¹⁶¹ Both non-human and human agent can only process one command at a time. I.e. machine code on which computer software is based only processes one command at a time (binary code, i.e. 0 or 1), albeit so fast that it often seems to happen simultaneously.

the concept of automation. Automation with regard to computer use refers to the automatic action executed by the PC which may or may not be initiated by the user. It is argued here that this automation is closely related to non-human agency. Bolter and Grusin (2000), when discussing hypermediacy such as the existence of multiple windows on a PC, argue that on a PC automated action is performed by the various pieces of software:

Its interface is interactive in the sense that these layers of programming always return control to the user, who then initiates another automated action.

(Bolter and Grusin 1999: 33)

That is, the machine appears to be autonomous and takes turns in agency with the user. While for Bolter and Grusin, the user ultimately initiates the PC's agency, it is argued here that software and hardware can act, i.e. cause effects, without prior user initiation. For example, the compatibility issues of certain hardware and software creates agency whereby certain items of hardware prescribe certain pieces of software, thus acting upon the software.¹⁶² The most illuminating example of automated software agency however is in the realm of Parasites and Viruses including virus protection. 'Automatic Live Update' of *Norton AntiVirus 2005* (2005) that runs once a week (or more often, depending on set-up), automatic disk defragmenter, automatic scheduler, reminders in Microsoft *Outlook* (2000), etc., prescribe or initiate actions on side of the user as these actions often interfere with the user's current task at hand. Thus, they requires agency on the side of the user to turn it off). Note that especially with anti-virus software, agency such as 'Automatic Live Update' is inscribed into the software to act at certain times, and only more advanced users can prescribe back their own preference by changing the software's defaults. This is true for all software that has been installed with 'default' settings. Only knowledgeable users can act upon the software and prescribe back their own preferred settings. The great increase of Parasites is another good case in point. Parasites are non-harmful¹⁶³ unsolicited commercial programs that have been

¹⁶² The earlier example of the Studio DV's capture card's inability to work with Adobe *Premiere 5.1* is a case in point.

¹⁶³ Non-harmful inasmuch that they do not, like viruses, attempt to make your computer unusable.

installed automatically for someone else's profit (Doxdesk n.d.). Mostly annoying rather than damaging, they increase unwanted advertising (great increase of pop-ups; change of homepage to the advertisers' sites etc.) and in a more damaging version can make the user's modem (analogue or ISDN) call premium-rate phone numbers, with a resulting high phone bill (bbc.co.uk n.d.a; bbc.co.uk n.d.b). These pieces of software act with a very real effect upon the user, often without the user's knowledge, and can have an effect on hardware performance (especially, system slow-down). In all these cases, the user has to react towards these non-human agents that act independently of her or his initiation, for example, turning off the automatic anti-virus update, closing the various windows that have popped up, removing any parasites and viruses that affect the computer's performance.

To conclude, this section has sought to explore how the software deployed influences webfilmmaking. Using the example of the most popular consumer video editing software Adobe *Premiere*, it was illustrated how a piece of software works with hardware and the user in constant negotiation which ultimately influences the speed, ease and length of webfilm production. The underlying concept of software agency was also explored. In this context, Manovich's account of software as exercising 'soft control' over the user via predetermined menus and choices was revisited. It was argued that his account of restrictive creation and production due to the limits of available menus is flawed since it did not take into account the far more complex relationship of software, hardware and user. Instead of Manovich's unidirectional concept of agency based on a binary understanding of identity, this thesis argued for a concept of alternate agency to better describe the ongoing negotiation and agency passed along the network of software, hardware and user. It agreed with Bolter and Grusin's (1999) views that closely linked technological agency to automation, and it was shown how numerous software applications act automatically and cause real effects without prior (initiated) action by the user. To conclude, then, webfilmmakers not only need to negotiate their agency within the software required for webfilmmaking directly, but also with any software and hardware that makes up the PC. Overall, technical knowledge and ongoing interaction within the network of hardware and software is crucial to any media production on a PC.

Compression

Compression is the process used to make digital files smaller. The two types of compression common to PC usage are lossy and lossless compression. In 'lossless' compression, the process of shrinking a file is reversible. A very common example is a program such as *WinZip* or *WinRar* that compresses a file temporarily but the file is restored to its original size once it is unzipped (decompressed). More relevant to digital video and audio files however is lossy compression. 'Lossy' here refers to the fact that after compression, certain digital information is irreversibly lost and the file cannot be restored to its original form and size. Lossy compression reduces file size by eliminating the same or very similar data.

Video files are extremely data rich. We have seen that 9.5 minutes of uncompressed video is approximately 2GB in file size, which is far too large for Internet transmission. Consequently, lossy compression is central to preparing video files for exhibition on the Internet. There are two main techniques to compress digital video. One is to eliminate similar data spatially, i.e. within a frame (intraframe compression). In the second technique, data that is redundant temporally is reduced (interframe compression). Spatial or intraframe compression is applied not only to moving images but also to still images. Its methods include the reduction of colour space, chroma subsampling, transform coding, and fractal compression (Wikipedia n.d.i). Interframe or temporal compression for obvious reasons applies only to moving image. Here, the motion of the video is compressed or compensated through a variety of methods (global motion compensation, block motion compensation, overlapped block motion compensation, and motion estimation) (Wikipedia n.d.j).

Compression is crucial to webfilmmaking as it is the key process that reduces a film's size, thus making it transmittable. The larger the source file, the more compression has to be applied in order to allow for a film's Internet exhibition. Knowledge of how compression works helps the filmmaker when planning a film for web exhibition. This is because certain rules if adhered to, make compression far more effective and help keep the webfilm's file size down. The most important technique of compression is temporal compression. Temporal compression deals with motion over time. It looks for similar patterns over time, which is why it is easier to compress relatively static shots as opposed to shots with a lot of movement. The more motion, the bigger the file size and the more temporal compression needed.

For this reason, it is recommended to keep the amount of motion in webfilms down. It is better to use a tripod instead of a handheld camera, and shots generally should be still and not too shaky. Panning shots are to be similarly avoided and any unnecessary camera movement including zoom, autofocus, and autoexposure should be kept to a minimum. Ultimately, webfilmmakers need to bear in mind and incorporate into their planning any subsequent compression of their film. The danger in disregarding compression at the planning stage of a webfilm is to end up with a film of large file size. This film may look good before compression but is likely to deteriorate considerably once the excessive amounts of compression required to reduce its size have been applied.

Compression of video files works via a codec. Codec is short for ‘**compressor-decompressor**’ and refers to the computer program that applies the algorithm to compress and decompress a file. There are many different codecs and they use different techniques, including vector quantisation, motion prediction, and others. Popular codecs are Sorenson Video (*QuickTime* standard), DivX, MPEG2 (DVDs), WMV (*Windows Media Player* standard), and RealVideo (*RealPlayer* standard). Codecs are most commonly implemented into software for manipulating digital moving image, for example video editing software or animation tools such as Macromedia’s *Flash*. In Adobe *Premiere* and Adobe *After Effects*, the codec is chosen on exporting the project from the timeline into a file format for web exhibition.

Codecs tie in with media formats because they compress and decompress digital video data according to a given video file format. Technically, the file format (such as *.mov, *.wmv) serves as ‘container’ for the different data streams that form part of a digital video file, including audio and video data and often an additional form of metadata to synchronise the two. Some file formats allow different codecs to be used to compress the video file, while others use only their own proprietary codec. The *.wmv format can only contain a file compressed by Windows Media codec, while *.mov can contain a number of different codecs, including Sorenson, Cinepak, and Indeo.

Media Format	Codec
WMV	Windows Media
MOV	Sorenson 3 ¹⁶⁴
RM	RealVideo
MP4	MPEG-4

Table 8: Media formats and their respective codecs.

Media players accept many different codecs and the relevant codecs are required in order to play the respective formats. For example, *Media Player Classic* only plays both *.rm and *.mov files after installing the codecs required for playback of these formats. The absence of the correct codec on the system or media player is the most common reason for a digital video file not to play (Prince n.d.; Wikipedia n.d.k; Wikipedia n.d.l).

The quality of codecs has been central to the evolution of webfilms. This is because the quality of the codec has a considerable influence on the quality of the film and so the progress of webfilms was heavily dependent upon codec development. This was crucial especially in the first few years (1997-1999) of films on the Internet where the great majority of users surfed on slow modem connections such as 28.8K and 56K. Given the slow transfer rates, the development of a codec with high compressibility was of central concern in order to make webfilms and other multimedia content transmittable. RealMedia codecs were crucial in these years as they were the first codecs designed specifically for web delivery, first in the area of audio (such as Radio broadcasts) and subsequently for video (such as news broadcasts). RealMedia initially was extremely successful as it performed well under low connection speeds. However, in the early stages of webfilm broadcasting ‘good performance’ was mainly measured by good compressibility. Compressibility concerns ranged higher than concerns about visual quality, since slow connection speeds meant that codec developments focused on compressibility as their main

¹⁶⁴ Sorenson 3 is the most popular codec for *.mov.

issue. Despite claiming newscast quality for video delivery over 28.8K modems, RealNetworks received a mixed response when premiering their RealVideo codec in October 1997. At the screening of a short film by Spike Lee and of a short cartoon, many of the critics present were not impressed with the quality. Reid (1997) in a review of the event states that the Premiere of RealVideo was characterised by “teensy screen sizes, grainy pictures, jerky motion”.

In early Internet broadcasting, codecs thus shaped the content they transmitted. The challenge was to achieve as high a degree of compression as possible without compromising too much on quality. Given that, as illustrated earlier, motion has to be minimal in order for the best compression at the least loss of quality, it is not surprising that the most prominent content for Internet broadcasting in the first few years consisted of newscasts. The dominant codec was RealVideo, and sites such as CNN and BBC converted their news content into RealVideo format before streaming it via their sites.

The technological limitations early webfilms encountered (low-spec PC hardware and low bandwidth) meant that there was initially not much development with regard to webfilms after the launch of the RealVideo codec in 1997. Boyd-Graber (2001) points out that the majority of early webfilms were either adult entertainment films or animations:

The majority of Internet films that were made just after the release of RealVideo were either excruciatingly long MPEGS that forced users to download the entire file before viewing - a distribution strategy that only really took off in the adult entertainment arena - or animations that took advantage of their visual simplicity.

(Boyd-Graber 2001: 18)

Animations in particular were becoming rapidly popular in online entertainment. This was mainly due to the adaptation of multimedia software *Flash* for animated webfilms. First released in 1996, Macromedia's *Flash* was originally intended as a Web drawing and animation package not for standalone webfilms but as a program to incorporate multimedia into webpages. However, the vector-based technology behind *Flash* was soon discovered for making short, self-contained animated

films.¹⁶⁵ The advantage of *Flash* software and its codec resulted in a fast uptake of *Flash* in a time when low bandwidth was seriously limiting short live action films. The early period of webfilms was thus characterised by an explosion of short animations and due to technical constraints for live action, the great majority of webfilms in the first two years were animated shorts. Wehn (2000-2005: 'English Introduction') refers to this great increase as a "renaissance of animation". In these first two years, then, the unavailability of high-quality codecs meant that live action webfilms were lagging far behind the popularity of animations.

This uneven advantage of short animated webfilms was addressed when better codecs were developed for live action films. A significant codec was the release of WindowsMedia in 1999. Alongside the ongoing improvements of existing codecs such as Cinepak and Sorenson, WindowsMedia had a great impact on the creation of live action webfilms. It was now possible to compress a live action film with a relatively error-free result and transmit it via low bandwidth.¹⁶⁶ In 1999, webfilms thus started to be broadcast on a greater scale and companies such as AtomFilms and iFilm sprung up showing webfilms as part of their entertainment portals. This second wave of webfilms was a result of the great improvements in codecs and furthermore pushed by the dotcom-boom affecting all Internet businesses in 1999:

Riding high on the wave of the dot-com revolution, various Internet film houses emerged, offering varied content. PlanetOut and AtomFilms both offered a large selection of gay and lesbian films, which had heretofore been confined to the festival circuit. Likewise, Sandrine Cassidy of USC said that in December of 1999, she was "receiving phone calls every ten minutes" to put their content online. After signing an agreement with USC, AtomFilms began streaming USC's films in the WindowsMedia and RealVideo formats.

(Boyd-Graber 2001: 19)

Overall, from 1999 onwards, the codecs were finally in place to allow for webfilm production and exhibition on a greater scale. While the dotcom crash brought many

¹⁶⁵ Vector-based images are smaller and easier to compress than bitmapped images, since the information is stored in vectors rather than each individual pixel. This means that both the *Flash* source file as well as the rendered, compressed file in *.swf format are considerably smaller than a similar-length file of live action footage.

¹⁶⁶ Faster connection speeds such as broadband, while introduced in 1999, only entered mainstream usage in 2001.

early webfilm companies down, the increase in broadband uptake from 2001 onwards and the ubiquitous availability of broadband today (2005) means there is greater scope than ever for the exhibition of film on the Internet. Due to the developments concerning both bandwidth and PC hardware, compressibility is no longer the main focus of codec creators. Instead, the emphasis has shifted to quality as the main concern and a codec now still has to deliver good compression but more importantly, a high-quality end result.

The issue of compression has been fundamental in the evolution of webfilms for a number of reasons. In the early days of Internet broadcasting, greatly hampered by slow connection speeds, codecs were crucial in making audio or video files transmittable. RealNetworks were an early pioneer and their codec for video pushed the boundaries of early web broadcasting, setting the standard for streaming video in the first few years of webfilms (1997-1999). However, the films were characterised by poor quality due to high amounts of compression, poor bandwidth and inferior hardware. This meant that live action webfilms initially existed on the margins of online entertainment. Unlike live action films, animations had quickly gained success and started spreading rapidly through the adaptation of multimedia software *Flash* for short animated films. Due to a codec characterised by high compressibility and high quality, short films in *.swf format were both small with regard to file size and high in quality. *Flash* films thus became the ideal art form in conditions of low bandwidth and inferior hardware. From 1999 onwards, the technical superiority of the *Flash* codec for animation was finally matched by an equivalent for live action films. Both the new WindowsMedia codec as well as the continual improvement of other codecs (for example Cinepak, Sorenson) meant that from 1999, the codecs were in place for webfilmmakers to produce highly compressed, high-quality films for the Internet.

The issue of codecs is today still relevant but it has taken on a different dimension. Codecs are central not only in compressing a film but also in viewing the end result. That is, any media player needs to have the right codec installed in order to view a webfilm that has been compressed using the same codec. This means that instead of compressibility and quality, the main concern for a webfilmmaker today is the

compatibility of a codec with various players and formats. The various codecs are typically already part of the software for playing digital media, i.e. the media player. However, we have seen that not all players support all formats. The most common reason for a media player not to play a digital video file is that the correct codec is not installed. Codecs are also at the centre of the file formats wars. Microsoft's WindowsMedia codec is a high-quality codec at a large transfer rate which means it works best at fast connection speeds. Microsoft has argued that the superior quality of their own proprietary codec is the reason for their non-support of many other media formats. This in turn has shaped the distribution and popularity of other codecs that as a response to Microsoft's market dominance as outlined in chapter 4.3.2.

Overall, the issue of compression is central to webfilmmaking and reaches far beyond the issue of reducing a film's size for Internet transmission. Codec innovation has been at the forefront of Internet broadcasting and compression techniques continue to shape the style and form of live action webfilms today. Codecs are closely related to their file format 'containers' and embedded in a technological battleground between software companies such as Microsoft and RealNetworks who all have a vested interest in their codec's technical superiority and popularity. As with the file format wars discussed in 4.3.2., it remains to be seen how the 'codec war' plays out.

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